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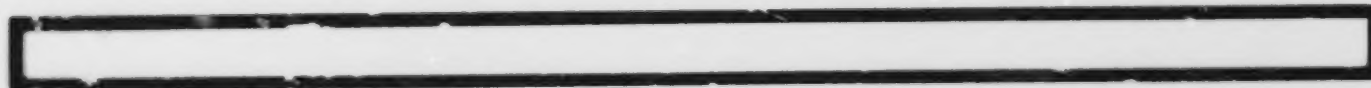
Influence of the Toxics Release Inventory on
State Air Toxics Control Programs

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The report is part of the National Network for Environmental Management Studies under the auspices of the Office of Cooperative Environmental Management of the U.S. Environmental Protection Agency. This study assesses the influence that the Toxics Release Inventory (TRI) data has had on State air toxics control programs and suggests ways the Environmental Protection Agency (EPA) can assist the States in their use of the TRI data. The TRI data describes the environmental release and off-site transfers of hazardous chemicals by large U.S. manufacturing facilities. Nine states participated in the study: Alabama, California, Kansas, Louisiana, New York, Ohio, Rhode Island, Virginia, and Washington. The States were selected because of their differing regulatory histories and TRI profiles, but similarly strong desire to use the TRI data. Each state answered questions about how their program was influenced by the TRI reporting requirements and data. The results of this study indicate that the States' air toxics control programs have been influenced by the TRI data in three ways: 1) their workload has been increased; 2) their visibility has increased because of TRI related questions; and 3) some of their programs are being altered to incorporate use of the TRI data. The study concludes that the EPA can help the States make the most of the TRI data by: 1) enabling them to generate and respond to public attention quickly and easily; and 2) providing them models of how other States have used the TRI data to advance their air toxics control efforts.				
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Influence of the Toxics Release Inventory
on
State Air Toxics Control Programs

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SECTION I: EXECUTIVE SUMMARY

This study assesses the influence that the Toxics Release Inventory (TRI) data has had on State air toxics control programs and suggests ways the Environmental Protection Agency (EPA) can assist the States in their use of the TRI data. The TRI data describes the environmental releases and off-site transfers of hazardous chemicals by large U.S. manufacturing facilities.

Nine States participated in the study: Alabama, California, Kansas, Louisiana, New York, Ohio, Rhode Island, Virginia, and Washington. The States were selected because of their differing regulatory histories and TRI profiles, but similarly strong desire to use the TRI data. Each state answered questions about how their program was influenced by the TRI reporting requirements and data.

The results of this study indicate that the States' air toxics control programs have been influenced by the TRI data in three ways: 1) their workload has been increased; 2) their visibility has increased because of TRI related questions; and 3) some of their programs are being altered to incorporate use of the TRI data.

The workload in State air toxics programs has increased by an average of 19 hours per week because of the TRI data. However, this average is skewed upward by Ohio and Rhode Island.

The States' air toxics control programs have received an average of 62 TRI related questions. This average is also skewed upward by two unusually high values, Ohio's and Virginia's.

Six of the survey States use the TRI data to decide what and where to monitor. Three States are using the data to make changes in their permit system, like increasing the number of chemicals and sources permitted and creating permits for fugitive emissions. Three of the States use the data in enforcement or compliance actions involving companies that did not report or companies that reported emissions higher than their permitted levels.

The TRI data has had an indirect influence on the air toxics programs by encouraging companies to head off bad publicity with voluntary emissions reductions. Companies have initiated voluntary emissions reductions in seven of the survey States.

This study concludes that the EPA can help the States make the most of the TRI data by: 1) enabling them to generate and respond to public attention quickly and easily; and 2) providing them models of how other States have used the TRI data to advance their air toxics control efforts.

To help the States' generate and respond to TRI related publicity the EPA should provide: 1) risk communication training;

2) sample press releases; and 3) sample questions answers for the most frequently asked questions. TRI related publicity is important because it leads to voluntary emissions reductions.

Providing models of TRI use that will help the States develop their programs requires the EPA to identify which States have air toxics programs of similar style and experience. There should be different models to fill the varying needs that the States' diverse programs have. Though developing these models may be a time consuming effort, there should be a large audience for them because few states appear to have begun using the TRI data yet.

TABLE OF CONTENTS

SECTION I: EXECUTIVE SUMMARY

SECTION II: INTRODUCTION

SECTION III: THE RESULTS OF THE SURVEY

SECTION IV: STATE BY STATE ANALYSIS

SECTION V: CONCLUSIONS AND RECOMMENDATIONS

APPENDIX A: EPA FORM R AND INSTRUCTIONS

APPENDIX B: THE SURVEY QUESTIONNAIRE

TABLE OF TABLES

TABLE 1: BACKGROUND ON THE SURVEYED AIR POLLUTION CONTROL AGENCIES

TABLE 2: INFLUENCE OF TRI ON STATE AIR POLLUTION CONTROL AGENCY RESOURCES

TABLE 3: QUESTIONS ABOUT THE TRI DATA

TABLE 4: REACTION TO THE TRI DATA

TABLE 5: USE OF THE TRI DATA

TABLE 6: INFORMATION FROM THE 1989 NATIONAL AIR TOXICS INFORMATION CLEARINGHOUSE (NATICH) DATABASE

TABLE 7: DATA FROM THE 1987 TOXICS RELEASE INVENTORY

SECTION II: INTRODUCTION

The Toxics Release Inventory

In October of 1986, Congress enacted the Emergency Planning and Community Right-to-Know Act. The law is also known as Title III of the Superfund Amendments and Reauthorization Act (SARA). Section 313 of SARA requires certain manufacturers to send the U.S. Environmental Protection Agency (EPA) and the States annual reports of their releases to the environment and their off-site transfers of certain chemicals. These reports have been used by the EPA to develop the national Toxics Release Inventory (TRI). The EPA published a summary of the 1987 TRI data and made that data available through the National Library of Medicine (NLM) computer network on June 19 of 1989.

Manufacturing facilities in the 50 States and the U.S. territories had to report if they met the following criteria in calendar year 1987: 1) they produced, imported, or processed 75,000 or more pounds of any of the 328 chemicals or chemical groups listed in the law or they used 10,000 or more pounds of the specified chemicals in any other manner; 2) they were engaged in general manufacturing activities and classified in the SIC code range 20 through 39; and 3) they employed the equivalent of ten or more full time employees. Some of these criteria have been changed for subsequent reporting years, but these limitations applied in 1987.

The target facilities reported the amount of each TRI chemical they released directly into the air, land or water, as well as the amount of each TRI chemical that they transferred to any off-site treatment or storage. These releases and transfers were reported on EPA's Form R. This form is included as the first appendix for this report.

The Purpose of This Study

The TRI reporting requirements and the resulting TRI data were expected to draw public attention to chemical releases and transfers. It was anticipated that this increased public awareness of industrial chemicals would lead to increased public involvement in the process of regulating chemicals. Because air toxics are usually regulated at the State level, public response to the data about chemical emissions was expected to influence the States' air toxics control agencies. This study was designed to assess the influence TRI has actually had on the air toxics programs and policy at the State level.

This study will be used by the EPA's Office of Air Quality Planning and Standards (OAQPS) to determine what can be done at the federal level to increase the usefulness of the TRI data for

State air pollution control agencies. OAQPS will use the study to help the States get the greatest possible benefit from TRI as they develop and implement their air toxics programs.

The Methodology for This Study

In order to assess the influence that TRI has had on State air toxics programs and policies, air toxics officials in nine States were surveyed. The survey questionnaire included sections addressing the following topics: 1) how the TRI reporting requirements and the TRI air emissions data have influenced the workload and resources of their office; 2) what type of TRI related questions have been asked, which questions were difficult to answer and what resources are used to help explain TRI; 3) how has the public, the regulated community and the media responded to the TRI air emissions data; and 4) how will the TRI data be used, and what additional information would make the TRI data more useful.

To comply with the limitations established in the Paperwork Reduction Act, only nine States were surveyed. Three data elements were used to select the nine States to be surveyed: 1) responses to a 1988 survey of State agencies conducted by the State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO); 2) characteristics of the State's TRI data, such as national ranking on air emissions and total number of emitting facilities; and 3) suggestions from air toxics policy experts in EPA's regional offices. The STAPPA/ALAPCO survey was used to identify the States that have been most influenced by the TRI reporting requirements or the TRI data. The State's TRI data was used to ensure that the survey population included States with different industrial profiles and correspondingly different emissions estimates. Finally, the experts in EPA's regions were used to ensure that the survey population included States with varying levels of government activity in air pollution regulation.

The States that were chosen for the survey all agreed to participate. In alphabetical order, the nine States are: 1) Alabama; 2) California; 3) Kansas; 4) Louisiana; 5) New York; 6) Ohio; 7) Rhode Island; 8) Virginia; and 9) Washington.

The results of the survey are presented in Section III of this report. Section IV presents a State by State summary of the survey results as well as background information about each State's air toxics program and each State's TRI data. Section V presents the conclusions that can be drawn from the survey information.

SECTION III: THE RESULTS OF THE SURVEY

This section will describe the information submitted by the survey States on a question by question basis. Tables 1 through 5 present the answers to every question, while the text describes the data's important trends and their exceptions. Appendix B is copy of the survey questionnaire that was used to generate this data.

Background on the Survey Respondents

In order to have a context for comparing the answers from different States, the questionnaire included a set of background questions. These questions asked the about the staff size and budget of each air pollution control agency. The answers to these questions are summarized in Table 1.

Most of the surveyed States do not have large staffs to pursue air toxics control activities. Seven of the surveyed States have less than four full time staff dedicated exclusively to air toxics control. Only New York and California have more air toxics staffers, at 12 and 25 respectively. Alabama does not have a single staff member that works exclusively on air toxics. Excluding New York and California, the average air toxics staff in the remaining seven surveyed States has two persons.

Most States use less than one fourth of their total air toxics staff for TRI related activities. Four of the surveyed States, Virginia, New York, Kansas and Alabama, do not have one full time staff member assigned to TRI activities. Alabama has had cyclical work on TRI, using two staff members full time when the reports were filed, without having year round staff on TRI related projects. Ohio and Louisiana use one staff member for TRI activities. Rhode Island has one full time staff member and one intern dedicated to TRI activities. California usually has two or three people, around one tenth of their total staff, working on TRI related projects. Washington could not estimate the amount of time their air office dedicates to TRI, but most of their answers indicate that it is relatively small.

Most of the surveyed States have an annual budget for air toxics control that is below one million dollars. In addition, the budget usually corresponds with the size of the staff. California is the only State that indicated it has a budget above one million dollars. (Three States, New York, Ohio, and Rhode Island did not provide budget estimates.) The California air toxics budget is expected to fall between \$1.25 and \$2 million for 1989. Virginia predicted the second largest air toxics budget for 1989, \$500,000. The air toxics budgets in other States fall between \$70,000 and

Table 1: Background on the Surveyed Air Pollution Control Agencies

QUESTIONS	STATES								
	AL*	CA	KS	LA	NY	OH*	RI*	VA	WA*
1. # of full time air toxics staff	0	25	2	4	12	2	5	2	1
2. 1989 air toxics budget (in Mil's)	0.16	1.62	0.075	0.15				0.5	0.07
3. # staff assigned to TRI work	2	2.5	0.5	1	0.25	1	1.5	0	UK

* Alabama had two staff persons working full time for two weeks, but does not usually have staff working on SARA related projects.

* Ohio has one person working on air toxics and one person from the air staff working on the Community Right to Know Program.

* Rhode Island has four full time staff and one intern.

* Washington could not provide an estimate of the time dedicated exclusively to TRI related projects.

\$160,000. These numbers are only estimates of expected expenditures, and they are only used to give a general indication of program size. The States were not given explicit instructions about what to include or exclude from their estimate, so each estimate may have been calculated in a different way, and depict a different scope of the State's program.

Influence of TRI on State Air Pollution Control Resources

The first section of the questionnaire requested information concerning the influence that the TRI reporting requirements and data have had on the time and resources of the State's air pollution control agency. The answers to these questions are summarized in Table 2.

1. The TRI reporting requirements had very little influence on the workload of most State air pollution control agencies. The air pollution control agencies spent an average of 14 hours per week on TRI related activities prior to June 19, 1989, when the TRI data were made available to the public through the National Library of Medicine (NLM). This average reflects six low values, States spending less than five hours per week, and two very high values (Ohio spent more than 60 hours per week and Rhode Island spent between 21 and 60). Ohio and Rhode Island spent time working with the reporting industries and analyzing the TRI data from their State. (California did not respond to this question.)

The release of TRI 313 data increased the workload in half the State air pollution control agencies. Four States have increased the time they spend on TRI related activities since the TRI data were made available to the public. (Again, California did not respond to this question, so there are only eight States being evaluated.) On average, the air pollution control agencies have spent 19 hours per week on TRI related activities since the TRI data release to the public. Individual states have experienced workload increases ranging from three to 30 percent of their total air toxics staff time.

2. States prioritize their TRI related activities very differently. These different priorities reflect the wide variety of TRI related activities that the States have undertaken. Answering questions from the media is a high priority for five of the States. Data processing is either a very high priority (three States ranked it first) or a very low priority (the other States all ranked it below 5th). All of the States except California engage in some TRI related permitting and regulatory reviews. TRI related inspection and compliance actions occur in all the States except California and Washington.

Four of the States described priority TRI activities that

Table 2: Influence of TRI on State Air Pollution Control Agency Resources

QUESTIONS	STATES									
	AL	CA	KS	LA	NY	OH	RI	VA	WA	AVE*
1. Hrs/wk on SARA work										
pre TRI release	<5		<5	<5	<5	>60	21-60	<5	<5	14
post TRI release	11-20		6-10	<5	<5	>60	41-60	6-10	<5	19
2. Ranking SARA actions										
company quest			3		8	3	2	4		
citizen's quest	6		2	3	6	4	8	2		
group's quest	5		4	6	7	3	7	3		
press/media quest	2		1	1	2	4	6	1		
office support	3		6		5			6		
data processing	1		5		1	6	1			
permit/reg review	4		7	2	3	5	5	5	1	
compliance/inspection			8	5	4	2	4	7		
other										
assess relative risks				4						
coordinate SARA prgm						1				
support state regs		1								
outreach to non-filers							3			
3. How many quest from:										
companies	<3	21-50	4-6	<3	4-6	>50		21-50	<3	17
citizens	<3	4-6	4-6	7-10	7-10	>50		>50	<3	16
citizens' groups	<3	4-6	4-6	<3	7-10	>50		16-20	<3	11
press/media	7-10	<3	11-15	21-50	21-50	21-50		>50	<3	18
4. Budget increase?	N	?	N	N	N	Y	N	N	NA	
5. Influence on office?										
more info expected	-	-	Y	-	-	-	-	-	-	-
prioritize actions	Y	-	-	-	-	-	-	Y	-	-
useful to develop prgm	-	-	-	Y	-	-	-	-	-	-
caused fugitive rel reg	-	-	-	-	Y	-	-	-	-	-
took time to summarize data	-	-	-	-	Y	-	-	-	-	-
id non-permitted sources	-	-	-	-	-	Y	Y	-	-	-
increased public awareness	-	-	-	-	-	Y	-	-	-	-
id chemicals for regs	-	-	-	-	-	-	Y	-	-	-
check accuracy of files	-	-	-	-	-	-	Y	-	-	-
evaluate de minimus reg prgm	-	-	-	-	-	-	-	-	Y	-

* Averages reflect the midpoint of all ranges. If the entry shows only the bottom of a range, >60 for example, that number was used to compute the average. If the entry shows only the top of the range, <5 for example, the midpoint between zero and the number shown, i.e. 2.5, was used to compute the average.

Y = Yes, N = No, and ? = Respondent uncertainty

had not been anticipated in the questionnaire: 1) assessing the relative risk of different industries; 2) coordinating their State's TRI program; 3) generating support for State regulations; and 4) identifying companies that should have but did not file TRI report forms.

3. The surveyed States can be categorized into four groups by the distribution of questions they received from the media, companies, citizens or citizens' groups. Alabama, Kansas and Washington received very few questions from any group. Virginia and Ohio received lots of questions from each group. New York and Louisiana received a lot of questions from the media, but only a few from the other groups and California got lots of questions from the companies, but hardly any from the media. (Rhode Island did not answer this set of survey questions.) The different patterns of questioning can probably be explained by the interaction of three factors: 1) the ranking on TRI emissions; 2) the other offices responsible for TRI inquiries (for example, the hazardous waste division might have primary responsibility for TRI activities and answer most of the questions concerning TRI); and 3) how much information the public already has about their State's toxics emissions.

4. TRI related activities have not caused most State air pollution control agencies to receive increases in their budget. Only one State air pollution control agency, Ohio, expects a budget increase that is attributable to TRI related activities. California indicated that a TRI related budget increase is possible, but not certain.

5. TRI has influenced a wide range of State air pollution control agency activities. In fact, few States characterize the influence of TRI on their programs in the same way. Two States, Alabama and Virginia, indicate that the TRI data has helped them prioritize their actions. Two others, Ohio and Rhode Island, say TRI has influenced their office because it allows them to identify sources of emissions that are not yet permitted. Louisiana and Washington have used the momentum created by the attention to TRI to develop their air toxics program. Kansas stated that there are now more demands for information from their office. New York took time to summarize the data, and used it to support the Governor's idea for a fugitive release control regulation. Ohio has felt the increased public awareness of their activities due to the TRI information.

There is more information about the way States use the TRI data under the heading "Use of the TRI Data by State Air Pollution Control Agencies" at the end of this section of the report.

Questions About TRI Data

The second section of the questionnaire requested information about the types of TRI related questions that were asked of the State air pollution control agencies, which questions were difficult to answer, and what resources helped the State officials explain the TRI data. The answers to these questions are summarized in Table 3.

1. Each State received a wide variety of questions concerning emissions. The questionnaire suggested six potential topics for questions: 1) how to access the TRI data; 2) how accurate is the TRI data; 3) how to interpret the data; 4) about the toxicity of certain chemicals; 5) about the exposure to certain chemicals; and 6) about the risk from emissions. Four States received questions on each of these six topics and the other States received questions on at least three of the six topics.

Of these six question types, no one topic was of significantly more interest than the others. Eight of the States were asked about the accuracy of the TRI data. Seven were asked to describe the toxicity of certain chemicals, to describe the exposure to certain chemicals, and how to interpret the TRI data. Six were asked about the risk from emissions and how to access the data.

Some States received questions that were not covered in the six topics described in the questionnaire. Alabama was asked which city or county has the highest risk from exposure to air toxics. New York was asked how the data is being used to support their regulatory program and their enforcement activities. Ohio received questions about waste minimization and pollution prevention policies and Rhode Island received two other questions: 1) about the total emissions of a certain chemical; and 2) about the types of industries that have the highest emissions.

2. The air pollution control agencies receive few questions that are not directly related to emissions data. Only five States received questions that did not concern emissions, and none of those questions were similar. California was asked about their State air toxics regulation. Individual companies asked the Kansas officials about their ranking in relation to other companies' emissions. Louisiana officials answered questions about the States national ranking in emissions. Ohio answered questions about water discharges reported in the TRI data, and the potential damage of TRI chemicals to plant life and property. Virginia was asked why some facilities, like federal installations and storage stations, do not have to report under TRI 313.

3. The States have difficulty answering questions about the level of exposure to TRI chemicals and the risk associated with

Table 3: Questions about the TRI Data

QUESTIONS	STATES										TOTAL
	AL	CA	KS	LA	NY	OH	RI	VA	WA		
1. What types of questions are asked?											
how to access the SARA data	N	Y	Y	N	Y	Y	Y	Y	N	= 3 N, 6 Y	
how accurate is the SARA data	Y	Y	Y	N	Y	Y	Y	Y	Y	= 1 N, 8 Y	
how to interpret the data	Y	Y	Y	N	Y	Y	Y	Y	N	= 2 N, 7 Y	
about the toxicity of chemicals	Y	Y	N	Y	Y	Y	Y	Y	N	= 2 N, 7 Y	
about exposure to the chemicals	Y	Y	Y	Y	Y	Y	N	Y	N	= 2 N, 7 Y	
about the risk from emissions	Y	Y	N	Y	Y	Y	N	Y	N	= 3 N, 6 Y	
What other emissions related questions did you receive?											
what is riskiest area in state	Y										
how is data used in regs & enforcement					Y						
about waste min/pollution prevention						Y					
total emissions for a certain chemical								Y			
industries with the highest emissions								Y			
2. What questions did you receive that were not related to air emissions?											
indiv company asked about their ranking	Y										
about the state's air toxics reg	Y										
about the state's national ranking				Y							
about water discharges						Y					
damage to plant life & property						Y					
why some facilities do not have to report								Y			
3. What type of question is hard to answer?											
how to access the SARA data	Y	N	N	Y	N	N	Y	N		= 5 N, 3 Y	
how accurate is the SARA data	Y	N	N	N	N	N	N	N	N	= 8 N, 1 Y	
how to interpret the data	Y	N	Y	N	N	N	N	N		= 6 N, 2 Y	
about the toxicity of chemicals	Y	N	N	N	N	N	N	Y		= 6 N, 2 Y	
about exposure to the chemicals	N	N	Y	N	Y	Y	Y	Y		= 3 N, 5 Y	
about the risk from emissions	N	N	N	N	Y	Y	Y	Y		= 4 N, 4 Y	
Other questions that are hard to answer?											
why no emission control regs			Y								
4. What have you found useful to explain the SARA data?											
EPA's chemical "Fact Sheets"	Y	Y	N	N	Y	Y	N	Y		= 3 N, 5 Y	
EPA's TRI hotline	N	N	N	N	N	Y	Y	Y		= 5 N, 3 Y	
What else has helped you explain the SARA data?											
dispersion modeling experience			Y								
info from state air toxics prgm	Y							Y			
NLM & EPA info on TRIS				Y				Y			
Info from Bureau of National Affairs					Y						
NATICH & IRIS						Y	Y				

their emissions. These difficulties are understandable because these questions are case specific, and, as such, there are no conclusive answers in any reference materials. In contrast, fewer States had difficulty with questions whose answers can be located or calculated, such as those about the accuracy or interpretation of the TRI data or the toxicity of the TRI chemicals. However, three States did indicate difficulty with questions about how to access the TRI data. These problems can easily be solved with additional information about using the EPA or NLM systems.

4. States rely upon the EPA chemical "Fact Sheets" and their own resources to help them explain the TRI data. Five States find the EPA chemical "Fact Sheets" useful, while three benefit from the TRI hotline. Six States referenced tools to help explain the TRI data that had not been anticipated in the questionnaire. The States use the following tools to help them explain the TRI data: 1) dispersion modeling experience; 2) their State's air toxics files; 3) NLM and EPA information that is available through TRIS; 4) the Bureau of National Affairs document; and 5) National Air Toxics Information Clearinghouse (NATICH) and Integrated Risk Information System (IRIS).

Surprisingly, for many States, there is little correlation between the types of questions they find hard to answer and the resources they find useful to explain the TRI data. Two of the three States that find it difficult to answer questions about accessing the TRI data do not find the TRI hotline helpful. In addition, two States that consider it hard to answer questions about the interpretation of the TRI data indicated that the hotline has not been useful for them. The two States that have difficulty answering questions about the toxicity of TRI chemicals both use the EPA's chemical "Fact Sheets". One State that said the "Fact Sheets" have not been useful has never received questions about the toxicity of the TRI chemicals.

Response to the TRI Data

The third section of the questionnaire requested information about how the public, the media and the regulated community have responded to the TRI 313 data. The answers to these questions are summarized in Table 4.

1. The 1989 data releases by Representative Waxman and the EPA were the only events that caused media attention to TRI in most of the surveyed States. The Waxman and EPA data releases caused media attention in all but two of the surveyed States.

Only two State air pollution control agencies, New York and Ohio, took actions that caused the media to pay attention to the TRI data. Both of these States are highly ranked for emissions

Table 4: Reaction to the TRI Data

QUESTIONS	STATES									TOTAL
	AL	CA	KS	LA	NY	OH	RI	VA	WA	
1. In your area, what initiated the media's interest in SARA data?										
an action taken by your office	N	N	N	N	Y	Y	N	N		N = 7 N, 2 Y
EPA's 6/19/89 TRI release	Y	Y	Y	Y	Y	Y	N	Y		N = 2 N, 7 Y
Waxman's 3/21/89 data release	Y	N	Y	Y	Y	Y	Y	Y		N = 2 N, 7 Y
SERC actions	N	N	N	N	N	N	N	N		N = 9 N, 0 Y
LEPC actions	N	N	N	N	N	N	N	N		N = 9 N, 0 Y
unknown events in winter of '89										
What else generated media interest in SARA data?										
citizen interest in specific sources			Y			Y				
industry PR and voluntary data releases				Y				Y		
the original data submission 7/1/88					Y					
an NRDC Report on SARA Data					Y					
unknown events in winter of 1989								Y		
2. What has been the public reaction to the SARA data?										
write/call industry	N	N	Y	Y		Y	N	N		N = 5 N, 3 Y
write/call your agency	N	N	Y	Y		Y	N	N		N = 5 N, 3 Y
write media/editorials	Y	Y	Y	Y		Y	Y	N		N = 2 N, 6 Y
specific demands for regulation	N	N	N	Y		Y	N	N		N = 6 N, 2 Y
Any other public reactions?										
citizen mtgs w/industry & EPA						Y				
tours of industrial plants						Y				
3. Do you know of industry efforts to reduce emissions that occurred because of SARA data?	Y	Y	Y	Y	Y	Y	Y	N	Y	N = 2 N, 7 Y
What type of industry reaction have you seen?										
multi-media waste minimization			Y							
general emissions reductions	Y			Y			Y		Y	
fugitive emissions reductions					Y					
increased awareness of reporting		Y								
public education/involvement in emis decisions							Y			

of TRI chemicals, 12 and 2, respectively. However, the States differ significantly in the time that their air pollution control agencies dedicate to TRI related activities. Ohio's office spends more than 60 hours a week on TRI activities, while the New York office spends less than 5. However, New York's air pollution control agency is promulgating a new regulation to limit fugitive emissions, and they used the TRI data to support this regulatory effort.

Two States, Kansas and Ohio, had the media's interest in TRI sustained by citizen interest. This is not surprising for Ohio, which is ranked second in TRI emissions, but is surprising for Kansas, ranked 32nd in emissions and 27th for total releases and transfers.

In two States, New York and Virginia, the media also showed interest in the original submission of the TRI data during the summer of 1988.

Industry actions, including voluntary information releases, caused media attention in Louisiana.

A report published by the Natural Resources Defense Council caused media attention in New York.

No media attention came as a result of the State Emergency Response Commission or the Local Emergency Planning Committees.

2. By far, the most common public reaction to the TRI data was letters to the media and editorials. Six States reported that the public responded to the TRI data by writing to the media and conducting a dialogue in the editorials. Three States, New York, Virginia and Washington, indicated that they have not observed a public response to the TRI data.

The intensity of public reaction can not be predicted from the State's ranking on TRI emissions or TRI releases and transfers. Industry and government officials were contacted as part of the public response in three States, Kansas, Louisiana and Ohio. In Louisiana and Ohio, the public made specific demands for regulation. As previously mentioned, a strong public interest is not surprising in Ohio because of its high rank in emissions and total TRI releases and transfers. National ranking on TRI output may also explain the public reaction in Louisiana. Louisiana is ranked 3rd in TRI emissions and 3rd in total TRI releases and transfers. However, other States with high rankings in either emissions or total output of TRI chemicals, like Alabama and Virginia, did not experience a strong public reaction to the TRI data. In addition, the low national rankings for Kansas does not explain their strong citizen interest.

3. Industry has responded to TRI by reducing emissions in

seven of the surveyed States. The air policy officials in every survey State, except Washington and Rhode Island, indicated that they are aware of industry efforts to reduce chemical emissions that have occurred because of the TRI data. Four States reported general emissions reduction efforts, one State reported an effort to reduce fugitive emissions, and another State reported an industry waste minimization campaign. TRI has also caused industry to have an increased awareness of reporting requirements, to undertake public education campaigns, and to allow public involvement in some of their emissions decisions.

Use of the TRI Data by State Air Pollution Control Agencies

The fourth section of the questionnaire requested information about how the State air pollution control agencies have used or plan to use the TRI data. The answers to these questions are summarized in Table 5.

1. Most States have concluded that the TRI emissions estimates are not similar to other data they have about the emission of toxics in their State. ("Not similar" can refer to differences in the quantity of emissions, type of chemicals being emitted or sources of emissions.) All the States that answered this question indicated that they have compared the TRI emissions data to other estimates of emissions for their State. (California did not answer this question.) Some States did not verify the data intentionally, however, they are capable of assessing the similarity of the TRI data to their other data. Five States indicated that they consider the TRI data different from their State's air toxics inventory, VOC inventory or emissions permitting files. However, the TRI data is similar to Virginia's air toxics inventory and Ohio's examination of the industry calculations used to compute the emissions and on-site inspections of reporting facilities have supported the TRI data. Rhode Island stated that some TRI emissions estimates are much more like their air toxics inventory data than others. This variation was attributed to the difference in effort expended by different reporting facilities.

2. Most States consider the TRI data to be accurate within a factor of 10. The consistency of the States' conclusions concerning the data's accuracy is surprising given how different the surveyed States are in terms of number and types of industries. Every surveyed State except New York and Ohio came to the same conclusion about the TRI data's level of accuracy. Ohio considers the data accurate to within a factor of two. New York also finds the point emissions estimates accurate to within a factor of two. However, New York considers the fugitive emissions estimates to be off by more than a factor of 100.

3. The accuracy of the TRI data influences how the States

Table 5: Use of the TRI Data

QUESTIONS	STATES										TOTAL
	AL	CA	KS	LA	NY	OH	RI	VA	WA		
1. Have you verified the data? estimates similar?	Y N		Y N	Y N	Y N	Y Y	Y Y&N	Y Y	Y N	Y = 0 N, 8 Y N = 6 N, 3 Y	
What were your verification sources?											
state's toxics inventory	Y			Y				Y	Y	Y	
state's VOC inventory			Y								
state's permit info				Y	Y						
re-examining the industry calculations						Y	Y				
on-site inspections						Y	Y				
2. How accurate is the data?											
within a factor of 2	N	N	N	N	Pt	Y	N	N		= 6 N, 1 Y	
within a factor of 10	Y	Y	Y	Y	N	N	Y	Y		= 2 N, 6 Y	
within a factor of 100	N	N	N	N	N	N	N	N		= 8 N, 0 Y	
off by > 100 times	N	N	N	N	Fug	N	N	N		= 7 N, 0 Y	
3. What influence does the accuracy have on your use of the data?											
use data in ranges only				Y			Y		Y		
include an error factor			Y								
reduced interest in use			Y		Y		Y	Y			
How else does the accuracy influence data use?											
use qualitatively		Y									
use "with caution"						Y					
send new inventory requests	Y										
4. Permit changes caused by data?	N	N	N	Y	Y	N	?	Y	NA	= 4 N, 3 Y	
What about your permit system will change?											
the permitting process				Y	N				N		
the permitted emissions levels				Y	N				N		
the permitting schedule				N	N				N		
permit more/different chemicals				N	N		Y	Y			
permit more/different sources				N	N		Y	N			
permit levels for fugitive emissions					Y						
5. Data used in enforcement acts?	N	N	N	Y	N	Y	Y	N		N = 6 N, 3 Y	
How do you use the data in enforcement or compliance actions?											
check reported vs. permitted emissions				Y		Y					
identify facilities that have not reported						Y	Y				

Table 5 continued: Use of the TRI Data

Table 5 continued: Use of the TRI Data										
QUESTIONS	STATES									
	AL	CA	KS	LA	NY	OH	RI	VA	WA	TOTAL
6. Use the data for monitoring?	Y	N	Y	Y	Y	Y	?	Y	N = 2	N, 6 Y
How do you use the data for monitoring actions?										
prioritize where/what to sample	Y		Y	Y		Y	Y	Y		
to id contaminants in emissions					Y					
id air toxics "hot spots" for action						Y				
7. How else do you plan to use the SARA 313 data?								Y		
update/expand toxics inventory	Y									
update/expand VOC inventory	Y		Y							
prioritize regs for diff chems	Y						Y			
evaluate need for air toxics regs			Y		Y					
evaluate requests for permit changes						Y				
check reported vs. permitted emissions									Y	
establish source classes for a state reg										
8. What other data would make it easier to use the SARA data?										
intermittent non-accidental rel	Y	Y	N	Y			Y	Y		= 1 N, 5 Y
detailed engineering data	Y	Y	Y	N			Y	Y		= 1 N, 5 Y
dispersion characteristics	Y	Y	Y	Y	Y	Y	Y	Y		= 0 N, 7 Y
compare SARA data to non-point emission			Y							
fugitive emission estimation techniques				Y						
release rates by source type						Y				
fugitive emission characteristics							Y			
risk reference doses/unit risk factors									Y	
sufficient info to predict ambient concentrations									Y	
health effects information			Y							

use the data, and how enthusiastic they are about using it. All the surveyed States indicate concern about the data's accuracy but only four States indicate that the level of inaccuracy reduced their interest in using the data. Three States, Louisiana, Rhode Island and Washington, only use the data in ranges. Kansas always includes an error factor when using the data. California only uses the data qualitatively, and Ohio only uses the data "with caution". The Alabama air pollution control agency sent out new inventory requests to one industry so they could clarify what caused the difference between the data reported for TRI and the data in their air toxics inventory.

4. The TRI data could influence the permitting system in four of the surveyed States and the data could influence each of these States' permitting systems differently. Kansas predicts that they may change their permitting process and their permitted emissions levels as a result of the TRI data. New York will only change the permit levels for fugitive emissions. Rhode Island considers permit changes uncertain, but if they occur they will influence the number and types of chemicals and sources that are permitted. Virginia only expects changes in the number and types of chemicals they permit.

5. The surveyed States appear hesitant to base compliance or enforcement activities on TRI data. Only three surveyed States have uses for the TRI air emissions data in their compliance or enforcement activities. Louisiana and Ohio might use the data in activities involving facilities that reported emissions higher than their permitted levels. Ohio and Rhode Island will use the data to identify facilities that have not submitted the required TRI and State inventory reporting forms. The States that do not plan on using the TRI data for compliance or enforcement activities may be hesitant to rely on the data for legal activities because the accuracy of the data is questionable.

6. Determining where to monitor and what to monitoring for are the most popular ways to use the TRI data. Six of the surveyed States will use the TRI data to prioritize what chemicals and sources should be monitored. New York will use the data to identify contaminants in emissions and Ohio will use the data to identify "toxic hot spots" for priority actions.

7. Most States have identified at least one use for the TRI data, in addition to the monitoring, compliance/enforcement and permitting uses that have already been described. Alabama and Rhode Island will use it to expand and update their own air toxics inventories. Alabama and Kansas will use it to expand and update their VOC inventories. Alabama will also use it to prioritize State action on various potential air toxics regulations they are developing. Kansas and Ohio will use it to evaluate the need for air toxics regulations. Louisiana will use

it to evaluate requests for changes in emissions permits. New York will use it to compare the emissions reported to those that are permitted for each facility and Washington will use it to develop source categories for a State air toxics regulation.

8. The surveyed States would like more data that can be used to estimate how much exposure and risk is caused by TRI emissions, including information on the dispersion characteristics of TRI chemicals, detailed engineering data and data about intermittent non-accidental releases. All seven States that responded to the question concerning the need for chemical dispersion characteristics considered the data useful. States also requested information that describes: 1) TRI data in comparison to non-point source emissions; 2) how to estimate fugitive emissions; 3) release rates by the type of source; 4) the characteristics of fugitive emissions; 5) risk reference doses or unit risk factors for TRI chemicals; 6) the health effects of TRI chemicals. Virginia summarized the States' data requests by simply asking for all the data necessary to predict ambient concentrations of TRI chemicals.

SECTION IV: STATE BY STATE ANALYSIS

This chapter will describe the information supplied by each individual survey State. It also gives a brief summary of the information that can be gathered about each State's air toxics program from the National Air Toxics Information Clearinghouse (NATICH) and a summary of each State's TRI information. Table 6 presents a summary of the NATICH information for the nine survey States. Table 7 presents a summary of the TRI information for these States.

Though this study focused on the influence that the TRI data has had on air pollution control agencies, it utilized information on total TRI releases to the environment and transfers to off-site facilities, in addition to information on TRI emissions. A State's total TRI profile influences the relative importance of the emissions data. For example, Virginia ranks 13th nationally for total TRI releases and transfers, but fifth for TRI emissions. California, on the other hand, ranks first for total TRI releases and transfers, but 14th for TRI emissions. Emissions are likely to get less attention in California's situation than they would in Virginia's.

ALABAMA

i. Background on Alabama's Air Toxics Control Program

Alabama has a relatively small program for controlling the emission of toxic chemicals. Though they have a relatively large budget for air toxics, they do not have legally enforceable emissions limits and there are few staff members.

According to the 1989 NATICH database, the Alabama air toxics control program is based on acceptable ambient concentration guidelines, not regulations. These acceptable ambient concentration guidelines are developed from occupational exposure limits. The program does not limit its work to a specific list of pollutants or source categories and the Alabama staff do not perform risk assessments on a case by case basis.

In August of 1989, the Air Division of Alabama's Department of Environmental Management did not have any full time staff exclusively dedicated to air toxics. They had assigned two people to TRI related work for a two week period when the TRI data was originally submitted. The budget for Alabama's air toxics control program was \$160,000 in 1989.

ii. 1987 TRI Data for Alabama

Alabama has roughly the average number of reporting facilities and reported releases or transfers. However, it has

Table 6: Information from the 1989 NATICH Database

QUESTIONS	STATES									
	AL*	CA	KS	LA*	NY	OH	RI	VA	WA	TOTAL
1. ATCP in place by 1988	C	C	C	C	C	C	C	C	F	= 8C, 1F
2. Promulgated regs?	N	C	N	C	N	F	C	C	F	=4C, 2F, 3N
3. Guidelines, no regs?	C	N	C	N	C	C	N	N	F	=4C, 1F, 4N
4. Specific pollutants?	N	C	C	N	N	N	C	N	F	=3C, 1F, 5N
5. Specific sources?	N	C	N	N	N	N	N	N	N	= 1C, 8N
6. Permit new sources?		C	C	C	C	C	C	C	F	= 7C, 1F
7. Evaluate old sources?		C	F	C	C	C	C	C	F	= 6C, 2F
8. Limits on program scope?		N	N	N	N	F	C	C	F	=2C, 2F, 4N
9. AAC guidelines used?	C	N	C	C	C	C	C	C	F	=7C, 1F, 1N
10. Formal AAC standards?	N	N	N	N	N	N	C	C	N	= 2C, 7N
11. AAC based on OELs?	C	N	C	C	C	C	N	C	F	=6C, 1F, 2N
12. AAC from health data?	N	N	C	N	C	C	C	C	N	= 5C, 4N
13. Technology based controls?	N	C	N	C	C	C	C	C	F	=6C, 1F, 2N
14. Cancer risk assessment?	N	C	C	N	C	C	C	N	N	= 5C, 4N
15. Non-cancer risk assessment?	N	C	N	N	C	F	C	N	N	=3C, 1F, 5N
16. Toxics emissions inventory?	N	C	C	C	C	C	C	F	C	=7C, 1F, 1N
17. Enforcement on toxics regs?		F	N	N	C	N	C	C	N	=3C, 1F, 4N
18. Regulate toxics w/permits?		F	N		C	N	C	N	N	=2C, 1F, 4N
19. Accident prevention planning?		F	N	C	C	F	N	N	N	=2C, 2F, 4N
20. Emergency response planning?		F	N	C	C	F	N	N	N	=2C, 2F, 4N

* Information about the programs in Alabama and Louisiana is from Table 5A of the 1989 NATICH Database Summary. Table 5A is titled "Regulatory Program Information Prior to 1988". The information for the other surveyed states is from the NATICH table 4A, titled "Regulatory Program Information". The information in table 4A is more current than that of 5A, but Alabama and Louisiana were not represented in 4A, so their 5A information was is presented.

Table 7: Data from the 1987 Toxics Release Inventory

DATA ELEMENT	STATES									
	AL	CA*	KS	LA	NY	OH	RI	VA	WA	AVE*
Rank on Emissions	9	14	32	3	12	2	42	5	25	
Rank for All R&T	4	1	27	3	19	7	44	13	17	
Mil Lbs of Emissions	98.3	82.7	24.7	138.3	89.4	172.7	5.9	132.4	40.6	87
Mil Lbs Rel & Trans	827	5840	183	1726	326	724	27	444	407	1167
Emissions as % of R&T	11.9	1.4	13.5	8.0	27.4	23.9	22.3	29.8	10.0	16.5
% of All Emissions	3.7	3.1	0.9	5.2	3.4	6.5	0.2	5.0	1.5	3.3
% of All Rel & Trans	3.7	25.9	0.8	7.7	1.5	3.2	0.1	1.8	1.8	5.2
Emitting Facilities	288	1288	150	209	623	1011	126	327	243	474
Emissions Reports	1111	3863	501	1287	1992	3625	296	1055	727	1606
Reporting Facilities	355	1662	184	259	765	1261	166	399	306	595
All Reporting Forms	1508	5830	742	1818	2836	5116	472	1450	1091	2318

* California information includes sodium sulfate. Sodium sulfate is released to surface waters in large quantities in California, and it contributes significantly to California's high ranking on total TRI releases and transfers.

* These averages include the values for the nine states in the survey. For every variable, this average will be higher than the average for all the states and territories that were subject to the TRI reporting requirements. All the survey states except Kansas and Rhode Island are above the national average on each of the criteria presented above.

roughly two times the average volume of air emissions and total releases or transfers.

Alabama ranks 9th nationally in air releases. In Alabama, 288 facilities reported TRI emissions. These facilities filed 1111 forms describing 98.3 million pounds of TRI emissions. Alabama's emissions constitute 3.7% of all TRI air emissions. Point sources release 81% of Alabama's emissions.

Alabama's TRI emissions constitute 11.9% of Alabama's total volume of TRI releases and transfers. Alabama received TRI forms from 355 different facilities in 1988, 1.8% of all the reporting facilities. Alabama facilities filed 1508 forms, 2.0% of all the forms filed. Their forms reported the release or transfer of 827.1 million pounds of TRI chemicals, or 3.67% of all releases and transfers. Alabama ranks 4th nationally in total TRI output.

iii. Summary of 1989 Survey Results for Alabama

The TRI data has not yet changed any of Alabama's air toxics control programs, however, it has and will be used to prioritize the actions of the air program staff. Alabama is using the TRI data to: 1) update and expand their toxics inventory; 2) update and expand their VOC inventory; 3) prioritize what they require in air toxics regulations; and 4) prioritize what chemicals and sources they monitor.

The expansion of activities by the Alabama air pollution control agency is not a response to public pressure about the TRI data. The public's response to the TRI data has been directed at the media, not industry or the government. The Alabama air pollution control agency has received few questions about TRI, probably less than 19. Of these questions, more than half came from the media. Despite the low number of questions, Alabama was asked about each of the six aspects of the data depicted in the questionnaire, except how to gain access to the data. Alabama was also asked which areas of the State have the highest risk from TRI chemical emissions.

The release of the TRI data has increased the workload in Alabama's air pollution control agency, though they do not expect a TRI related budget increase. After the release of the TRI data on the NLM network, the Alabama air pollution control agency increased its average number of hours per week spent on TRI related activities from less than five to between 11 and 20. This time is used for several activities, including (in order of priority): 1) data processing; 2) answering media questions; 3) providing support to other offices with TRI responsibilities; and reviewing permits and potential regulations in light of the TRI data.

The Alabama air pollution control agency believes at least

one Alabama company may have reduced their emissions of a TRI chemical as a result of the TRI data. The company denies that the reduction is related to the publication of the TRI data, however, the company announced the reduction just before the TRI data was released on the NLM network.

CALIFORNIA

i. Background on California's Air Toxics Control Program

California has the largest and best financed air toxics control program of the nine surveyed States by a wide margin. However, TRI related work is not a high priority in California because they have their own reporting requirements for air toxics. The California reporting requirements, promulgated under their Air Toxics " Hot Spots" Information and Assessment Act, made information about California's chemical emissions available before the TRI data.

According to the 1989 NATICH database, the California air toxics control program is based on regulations that limit the emissions of specific list of pollutants and source categories. Under the California system, permits are issued to both new and existing sources, and there is no limitation on the size of the sources that can be regulated. California uses technology based controls, so they do not need to establish acceptable ambient concentration levels. Their staff performs both cancer and non-cancer risk assessments to evaluate air toxics. In addition, their staff maintains an air toxics inventory for California.

In the future, the California staff plans to use enforcement actions and permit renewals to limit air toxics emissions. They also hope to establish accident prevention and emergency response programs in the future.

In August of 1989, the Toxic Air Contaminant Identification Branch of California's Air Resources Board had around 25 full time staff for air toxics work and, of those persons, two or three were assigned to TRI related work. The budget for California's air toxics control program was between \$1.25 and \$2.0 million in 1989.

ii. 1987 TRI Data for California

California has: 1) roughly twice the average volume of TRI air emissions; but 2) roughly 14 times the average volume of total TRI releases and transfers. California ranks first in the nation for total number of reporting facilities, the total number of releases or transfers and the total volume of releases or transfers. Without Sodium Sulfate, California's ranking falls in each of these three categories. Sodium Sulfate does not

influence emissions rankings because it is discharged into surface waters.

The 1288 California facilities with air emissions filed 3863 forms describing 82.7 million pounds of emissions. These emissions constitute 3.1% of all TRI air emissions. California ranks 14th nationally in air releases. Point sources release 57% of the emissions, and fugitive releases constitute the other 43%.

California air emissions constitute 1.4% of California's total volume of releases and transfers. These releases and transfers were described in 5830 reporting forms from 1662 different facilities. This constitutes 8.6% of all the reporting facilities and 7.9% of all the forms filed. These forms reported the release or transfer of 5.84 billion pounds of TRI chemicals, or 25.9% of all releases and transfers nationally.

iii. Summary of 1989 Survey Results for California

TRI has had a very limited influence on California's air toxics policies. The data will be used to support State regulations, and the budget for air toxics might be increased to support this process. The TRI data will be incorporated into the State's process for the selecting compounds for regulation, however, it will not be used as the basis for changes in their permitting system, as the basis for enforcement or compliance acts, or in monitoring.

Because it is similar to the data from California's own reporting requirements, the TRI data got limited attention from the public or the media in California. Public response to the TRI data was limited to letters to the media and editorials. The California air pollution control agency received fewer than 15 questions related to TRI from citizens, citizens' groups or the media. However, they did receive between 21 and 50 TRI related questions from reporting companies. Though the questions put to the air pollution control agency touched on the topics anticipated in the survey, many of the companies were also asking about the difference between the federal and the State reporting requirements.

The California air pollution control agency believes that California companies have reduced their emissions of a TRI chemical as a result of the TRI data and their increased awareness of reporting requirements.

KANSAS

i. Background on the Kansas Air Toxics Control Program

The Kansas program for controlling toxic emissions typifies the average for the nine surveyed States except that they do not

use technology based controls. They have a small budget for air toxics, they do not have legally enforceable emissions limits, the staff can cover all the basic toxics related activities, but they do not have the resources to do much more than the essentials.

According to the 1989 NATICH database, Kansas has an air toxics control program based on guidelines that list pollutants, but not source categories. Under the Kansas system, permits are issued to new sources of all sizes. Existing sources are not permitted at this time, but there are plans to evaluate their emissions. Kansas uses acceptable ambient concentration levels determined from occupational exposure levels and from reviews of health data. The staff performs cancer risk assessments to evaluate air toxics and maintains an air toxics inventory.

At this time, the Kansas does not anticipate that they will use enforcement actions or permit renewals to limit air toxics emissions. In addition, there are no plans to establish accident prevention and emergency response programs in the near future.

In August of 1989, the Bureau of Air and Waste Management in the Kansas Department of Health and the Environment had two full time staff working exclusively on air toxics. One staff member dedicated half of his or her time to TRI related work. The budget for the Kansas air toxics control program was \$75,000 in 1989.

ii. 1987 TRI Data for Kansas

Kansas has roughly one half the average: 1) number of facilities; 2) reported releases or transfers; and 3) volume of releases or transfers. Kansas only emits one fourth the average volume of emissions, implying that the few facilities with emissions have relatively low output.

The 150 facilities in Kansas with air emissions filed 501 forms describing 24.7 million pounds of emissions. These emissions constitute 0.9% of national TRI emissions, ranking Kansas 32nd in air releases. Point sources release 69% of the Kansas emissions, and fugitive releases constitute the other 31%.

Kansas emissions constitute 13.5% of the total volume of releases and transfers from Kansas facilities. Kansas received TRI reporting forms from 182 different facilities. The facilities filed 742 forms. Kansas had 1.0% of all the reporting facilities and received 1.0% of all the forms filed. Kansas forms reported the release or transfer of 183.4 million pounds of TRI chemicals, 0.8% of all releases and transfers. This volume of releases and transfers ranks Kansas 27th for total output of TRI chemicals.

iii. Summary of 1989 Survey Results for Kansas

The TRI data has changed the demands made of the Kansas air pollution control agency, but not enough to secure a budget increase. The workload of the Kansas air pollution control agency was increased by less than five hours a week before the release of the TRI data on the NLM network. Since that release, their workload has increased by six to ten hours a week.

Answering the questions of the media, citizens, companies and citizens' groups are the top four TRI related priorities of the Kansas air pollution control agency. The Kansas air pollution control agency had received between 23 and 33 TRI related questions by August 1989. Though this is fewer questions than many of the States received, they have significantly influenced the Kansas air pollution control agency. The questions put to the air pollution control agency have covered many TRI related topics, but not the toxicity of the TRI chemicals or the risk from TRI emissions. One reporting facility called to ask about their ranking on TRI output and citizens have asked why there are not more regulations to limit chemical emissions.

Public reaction to the TRI data has not focused solely on the media in Kansas, as it has in many other States. The public reaction has included calls and letters to industry and, as previously mentioned, specific requests of the air pollution control agency.

The TRI data may have a significant impact on air toxics policies in Kansas because it will be used to evaluate the need for regulations to control emissions. In addition, Kansas will use the TRI data to prioritize where they monitor emissions and what chemicals they monitor for. Their final use for the TRI data is updating and expanding their VOC inventory. They do not anticipate using the data in enforcement/compliance actions or as the basis for changes in their permitting system. The Kansas air pollution control agency indicates that their interest in using the TRI data is reduced by their concerns about the data's accuracy.

The Kansas air pollution control agency indicated that at least one Kansas company reduced their emissions of a TRI chemical as a result of the TRI data. This company initiated a multi-media waste minimization program.

LOUISIANA

i. Background on the Louisiana Air Toxics Control Program

Louisiana has a small but growing air toxics control

program. They have a healthy budget, relative to some of the other surveyed States, an established permitting system, and some legally enforceable emissions limitations.

According to the 1989 NATICH database, Louisiana has an air toxics control program based on promulgated regulations and guidelines, but not limited to a list of pollutants or source categories. Louisiana regulates new and existing emitters, and there is no limitation on the size of the sources that can be regulated. Technology based controls are used in conjunction with acceptable ambient concentration levels determined from occupational exposure levels. The Louisiana staff does not perform case specific risk assessments to evaluate air toxics. However, they do maintain an air toxics inventory, an accident prevention program and an emergency response program.

At this time, Louisiana does not use enforcement actions and permit renewals to limit air toxics emissions.

In August of 1989, the Office of Air Quality and Nuclear Energy in the Louisiana Department of Environmental Quality had four full time staff working exclusively on air toxics. One staff member dedicated his or her time to TRI related work. The budget for the Louisiana air toxics control program was \$150,000 in 1989.

ii. 1987 TRI Data for Louisiana

Louisiana has: 1) just over half the average number of TRI facilities; 2) just over the average number of reported releases and transfers; 3) roughly three times the average volume of TRI emissions; and 4) roughly four times the average volume of TRI releases and transfers.

In Louisiana, 209 facilities had TRI air emissions. These 209 facilities filed 1287 forms describing 138.3 million pounds of emissions. Louisiana emissions constitute 5.2% of national TRI emissions, ranking the State third in air releases. Point sources release 82% of the Louisiana emissions, and fugitive releases constitute the other 18%.

Louisiana emissions constitute 8.0% of the total volume of releases and transfers from Louisiana facilities. The total volume of releases and transfers from Louisiana facilities was described in 1818 TRI reporting forms from 259 different facilities. These Louisiana had 1.3% of all the reporting facilities and received 2.5% of all the forms filed. Louisiana forms reported the release or transfer of 1.73 billion pounds of TRI chemicals, or 7.7% of all releases and transfers. This volume of releases and transfers ranks Louisiana third for total output of TRI chemicals.

iii. Summary of 1989 Survey Results for Louisiana

The TRI data has helped Louisiana develop their air toxics control program. Though the workload of the office has increased by less than five hours a week, and they do not expect a TRI related budget increase, they are using the data as the basis for changes in their permitting system, enforcement/compliance actions and for monitoring decisions. Using the TRI data, Louisiana expects to make changes in their permitting process, the emissions levels they permit and their system for evaluating permit modification requests. They will also use the data in enforcement/compliance actions involving those companies whose TRI data indicates that they may emit more than their permits allow. In addition, Louisiana will use the TRI data to prioritize their site specific ambient air monitoring for toxics.

Public reaction to the TRI data has been strong and broadly focused in Louisiana. The public reaction has included calls and letters to industry, calls and letters to the air pollution control agency and specific demands for regulation. Louisiana motivation to use the TRI data may be attributable to this strong public reaction.

With this strong public reaction, the Louisiana air pollution control agency has had to divide their time between answering TRI related questions and using the data for program development. The highest priority TRI related action of the air pollution control agency is answering the questions of the press and media. Respectively, their following priorities are: 2) using the TRI data in permitting or regulatory reviews; 3) answering the questions of individual citizens; 4) assessing the relative risks of various emissions from TRI industries; 5) using the data for compliance or inspection plans; and 6) answering questions from citizens' groups.

The Louisiana air pollution control agency has seen companies exhibit considerable interest in and action on voluntary emissions reductions as a result of the TRI data. In addition to emissions reductions, Louisiana companies have initiated their own data releases as part of new public relations efforts.

NEW YORK

i. Background on the New York Air Toxics Control Program

New York has a large staff for air toxics, relative to most of the other surveyed states. The New York air pollution control staff has taken on a wide variety of different activities, including a new effort to regulate fugitive emissions.

According to the 1989 NATICH database, New York has an air toxics control program based on guidelines but not a list of pollutants or source categories. In New York, permits are issued to new and existing sources, and there is no limitation on the size of the sources that can be regulated. New York uses technology based controls as well as acceptable ambient concentration levels determined from Occupational Exposure levels and from reviews of health data. The staff performs cancer and non-cancer risk assessments to evaluate air toxics health effects. They also maintain an air toxics inventory and use enforcement actions and permit renewals to limit air toxics emissions. In addition, there are established accident prevention and emergency response programs.

In August of 1989, the Division of Air Resources in the New York Department of Environmental Conservation had 12 full time staff working exclusively on air toxics. One staff member dedicated a quarter of his or her time to TRI related work. The budget for the New York air toxics control program was not reported.

ii. 1987 TRI Data for New York

New York has roughly twice: 1) the average volume of air emissions; 2) the number of TRI facilities; and 3) the number of reported releases and transfers. Surprisingly, it has slightly less than the average volume of releases and transfers. In New York, 623 facilities filed 1992 forms describing 89.4 million pounds of emissions. New York emissions constitute 3.4% of national TRI emissions, ranking them 12th in air releases. Point sources release 62% of the emissions, and fugitive releases constitute the other 38%.

New York's emissions constitute 27.4% of their total volume of TRI releases and transfers. New York's total volume of TRI releases and transfers were described in 2836 TRI reporting forms from 765 different facilities. New York had 4.0% of all the reporting facilities and received 3.8% of all the forms filed. New York forms reported the release or transfer of 326.1 million pounds of TRI chemicals, or 1.5% of all releases and transfers. This volume of releases and transfers ranks New York 19th for total output of TRI chemicals.

iii. Summary of 1989 Survey Results for New York

The TRI data will be used in three activities in New York: 1) promulgating State regulations; 2) verifying permit compliance; and 3) interpreting monitoring results. Despite these uses, the New York air pollution control agency spends less than five hours per week on TRI related activities, and they do not expect a TRI related budget increase. The TRI data has been used to support a State regulations concerning fugitive

emissions. The New York permitting staff will use the data to check reported emissions against permitted emission levels, and the monitoring staff will use it to identify contaminants detected while performing ambient air monitoring. The TRI data will not be used as the basis for changes in their permitting system or as the basis for enforcement or compliance acts.

The TRI data got limited attention from the public in New York. Public response to the TRI data was limited to isolated letters and calls to the New York air pollution control agency. They received fewer than 26 questions related to TRI from citizens, citizens' groups or companies. However, they did receive between 21 and 50 TRI related questions from the media. The questions put to the air pollution control agency touched on the topics anticipated in the survey, and they were also asked about how the data is being used to support their regulatory program and enforcement activities.

The New York air pollution control agency believes that the large well known companies in New York have reduced their emissions as a result of the TRI data. They believe that industry efforts are focused on reducing fugitive emissions.

OHIO

i. Background on Ohio's Air Toxics Control Program

Ohio has a small but growing air toxics control program. They have plans to expand their staff and the scope of their staff's activities. They have a special perspective on the TRI data because they were the assigned the primary responsibility for TRI at the State level in Ohio.

According to the 1989 NATICH database, Ohio has an air toxics control program based on guidelines, but promulgated regulations are planned. The program is not limited to a specific list of pollutants or source categories, though there are plans for a limitation on the size of the sources that can be regulated. Both new and existing sources are evaluated. Ohio uses both technology based controls and acceptable ambient concentration (ACC) levels. The ACC levels are set using occupational exposure limits and health effects literature. The Ohio staff performs cancer risk assessments to evaluate air toxics, and plans to begin performing non-cancer risk assessments also. In addition, their staff maintains an air toxics inventory, though they do not use enforcement actions and permit renewals to limit air toxics emissions. Ohio has already established accident prevention and emergency response programs.

In August of 1989, the Division of Air Pollution Control in the Ohio Environmental Protection Agency had one full time staff

working exclusively on air toxics. This staff member dedicated nearly all of his or her time to TRI related work. A second technical staff person will be hired for TRI work in 1989. The budget for the Ohio air toxics control program was not reported.

ii. 1987 TRI Data for Ohio

Ohio has roughly 3 times the: 1) average volume of TRI emissions; 2) the average number of TRI facilities; and 3) the average volume of releases or transfers. However, their volume of releases and transfer is only 1.5 times the average.

The 1101 Ohio facilities with TRI emissions filed 3625 forms describing 172.7 million pounds of emissions. These emissions constitute 6.5% of all TRI air emissions. Ohio ranks 2nd nationally in air releases. Point sources release 74% of Ohio's emissions, and fugitive releases constitute the other 26%.

Ohio emissions comprise 23.9% of Ohio's total volume of releases and transfers. Ohio ranked 7th nationally in total TRI releases with 1261 different facilities filing 5116 forms. Ohio received 6.9% of all the forms filed. Ohio facilities released or transferred 23.9 million pounds of TRI chemicals, 3.21% of all releases and transfers.

iii. Summary of 1989 Survey Results for Ohio

The TRI data has significantly influenced the activities and the workload of the Ohio air toxics control program. Their workload has increased by more than 60 hours a week because they coordinate Ohio's TRI program and answer most of the TRI related questions. In addition, they use the TRI data to assess the need for new permits and new regulations. As a result of these four activities, they expect TRI related budget and staffing increases. Coordinating the State's TRI program is the first priority of the Ohio air toxics staff. Their other TRI related priority activities are: 1) identifying and inspecting sources of toxic emissions that are not permitted; 2) answering questions about the TRI data; and 3) evaluating the need for additional emissions control regulations. In addition, Ohio will use the TRI data to prioritize the sites they monitor to identify their "air toxics hotspots".

Of the surveyed States, Ohio has observed the strongest public reaction to the TRI data. The public reaction has included calls and letters to the media, to industry, to the air pollution control agency and specific demands for regulation. The air pollution control agency has received more than 50 questions from each of the following groups: 1) companies; 2) citizens; and 3) citizens' groups. Surprisingly, they received fewer questions from the media, between 21 and 50. Most states in the survey received most of their TRI related questions from

the media. In addition to calls, letters and questions, the concerned citizens of Ohio have requested informational meetings with the Ohio EPA and tours of emitting facilities.

The Ohio air pollution control agency has seen companies enact voluntary emissions reductions as a result of the TRI data. Ohio companies have also initiated public education programs and programs to increase public involvement in their emissions decisions.

RHODE ISLAND

i. Background on the Rhode Island Air Toxics Control Program

Rhode Island has legally enforceable emissions limitations and their air toxics control staff pursues a variety of different non-regulatory activities. The staff is larger than that in most of the surveyed states, and they have chosen to dedicate an unusually large proportion of their staff time, roughly one-fourth, to TRI related work.

According to the 1989 NATICH database, Rhode Island has an air toxics control program based on promulgated regulations and a specific list of pollutants. The program has a size limit for regulated emitters that applies to both new and existing sources. Rhode Island uses both technology based controls and acceptable ambient concentration (ACC) regulations. The ACC levels are set using health effects literature. The Rhode Island staff performs cancer and non-cancer risk assessments to evaluate air toxics, uses enforcement actions and permit renewals to limit toxic emissions, and maintains an air toxics inventory. Rhode Island has not established accident prevention and emergency response programs.

In August of 1989, the Division of Air and Hazardous Materials in the Rhode Island Department of Environmental Management had four full time staff and two interns working exclusively on air toxics. One staff member and one intern were assigned to TRI related work. The toxics staff will be enlarged by two or three professionals for TRI work in 1989. The budget for the Rhode Island air toxics control program was not reported.

ii. 1987 TRI Data for Rhode Island

Rhode Island has roughly one half the average number of facilities and reported releases or transfers, but roughly one tenth the volume of emissions or total releases and transfers. However, consideration of Rhode Island's small size is necessary to keep these seemingly reassuring results in perspective.

The 126 Rhode Island facilities with TRI emissions filed 296

forms describing 5.93 million pounds of emissions. These emissions constitute 0.2% of all TRI air emissions. Rhode Island ranks 42nd nationally in air releases. Point sources release 44% of the Rhode Island emissions, and fugitive releases constitute the other 56%.

Of Rhode Island's total volume of TRI releases and transfers, 22.3% are emissions. Rhode Island ranks 42nd nationally in terms of total TRI releases and transfers. They received TRI 472 reporting forms from 166 different facilities. The forms described facilities that released or transferred 26.6 million pounds of TRI chemicals, 0.12% of all TRI releases and transfers.

iii. Summary of 1989 Survey Results for Rhode Island

The TRI data has had a strong influence on the activities and the workload of the Rhode Island air toxics control program. Their workload has increased by 41 to 60 hours a week because they use the data for: 1) checking the accuracy of their toxics inventory; and 2) identifying companies that should have emissions permits. They may use the data for: 1) identifying and prioritizing chemicals for regulation; and 2) identifying sources to monitor. Despite these activities, they do not expect a TRI related budget increase. Rhode Island's top priority TRI related activity has been establishing the data management system that allows them to analyze the TRI data so it can be incorporated into the activities described above.

The Rhode Island air pollution control agency characterizes the public reaction to the TRI data in their state as "minimal". As a result, responding to questions from companies is a higher priority than questions from citizens, citizens' groups or the media. The public reaction to TRI in Rhode Island was primarily limited to calls and letters to the media. Though the air pollution control agency could not estimate how many questions they received, the number must be small enough to keep answering questions a low priority for them. They rank questions from companies as their second TRI related priority activity, but questions from the media, citizens' groups and individual citizens rank 6, 7 and 8 respectively.

The Rhode Island air pollution control agency does not know of any companies that have voluntarily reduced emissions as a result of the TRI data.

VIRGINIA

i. Background on the Virginia Air Toxics Control Program

Virginia has a relatively large budget for air toxics, and legally enforceable emissions limits, but a small staff. The staff of their program for controlling the emission of toxic chemicals has taken on numerous responsibilities, and appear to have only a limited capacity for new activities or projects.

According to the 1989 NATICH database, Virginia has an air toxics control program based on promulgated regulations, but they do not specify a list of pollutants or source categories. The program does place a limit on the size of the sources that can be regulated and it applies to both new and existing sources of air toxics emissions. Virginia uses both technology based controls and acceptable ambient concentration (ACC) regulations. The ACC levels are set using occupational exposure limits and health effects literature. The Virginia staff does not perform cancer or non-cancer risk assessments to evaluate air toxics. However, they do use enforcement actions, but not permit renewals, to limit air toxics emissions. They plan to establish an air toxics inventory, but have not yet planned accident prevention or emergency response programs.

In August of 1989, the Division of Technical Evaluation in the Virginia Department of Air Pollution Control had two full time staff working exclusively on air toxics. Neither staff member has spent a large portion of his or her time on TRI related work. The budget for the Virginia air toxics control program was \$500,000 in 1989.

ii. 1987 TRI Data for Virginia

Virginia has roughly the average number of TRI facilities, reported releases or transfers, and the average volume of releases and transfers. However, Virginia has more than twice the average volume of TRI emissions. These results have caused special attention to air releases of TRI chemicals in Virginia.

Virginia ranks 5th nationally in air releases. The 327 Virginia facilities with TRI emissions filed 1055 forms describing 132.4 million pounds of emissions. These emissions constitute 4.99% of all TRI air emissions. Point sources release 80% of the Virginia emissions, and fugitive releases constitute the other 20%.

Of Virginia's total volume of TRI releases and transfers, 29.8% were air emissions. Virginia received 1450 TRI reporting forms from 399 different facilities. This constitutes 2.1% of all the reporting facilities and 1.96% of all the forms filed. Virginia facilities released or transferred 444.0 million pounds of TRI chemicals, 1.97% of all releases and transfers. These releases and transfers rank Virginia 13th nationally.

iii. Summary of 1989 Survey Results for Virginia

The TRI data has helped the Virginia air pollution control staff focus its toxics programs. In addition, it will be used to expand their permitting program and prioritize their monitoring actions. Virginia is using the TRI data to: 1) support amendments to their regulations so they can establish permits for additional chemicals; and 2) prioritize what chemicals and sources they monitor.

The Virginia air pollution control agency has not experienced a strong public response to the TRI data, though they did receive numerous questions about the data from all types of groups. The Virginia air pollution control agency has received more TRI related questions than any of the surveyed states except Ohio. Most of the questions came from the media or individual citizens. Virginia was asked about each of the six aspects of the data depicted in the questionnaire, and also asked why some entities, federal facilities for example, are not required to report.

The release of the TRI data has caused an increase in the workload of Virginia's air pollution control agency, though they do not expect a TRI related budget increase. After the release of the TRI data on the NLM network, the Virginia air pollution control agency increased its average number of hours per week spent on TRI related activities from less than five to between 6 and 10. This time is used primarily for answering questions and reviewing their need for new permits in light of the TRI data.

The Virginia air pollution control agency believes at least one company has submitted a voluntary permit modification involving an emission reduction.

WASHINGTON

i. Background Information on the Washington Air Toxics Controls

The Washington air pollution control agency is beginning to develop a toxics control program, but they have not yet undertaken many of the activities that are on-going in many other states. Currently, they are using their small staff to develop a regulatory program that would establish de minimis emission levels for specific source categories.

According to the 1989 NATICH database, Washington has an air toxics inventory, but they do not yet have an official air toxics control program. The Department of Ecology plans to establish a program that will be based on guidelines and promulgated regulations. It will regulate a specific group of pollutants. The program will place a limit on the size of the sources that can be regulated and apply to both new and existing sources of

air toxics emissions. Washington will use both technology based controls and acceptable ambient concentration (ACC) regulations. The ACC levels will be based on occupational exposure limits, not health effects literature. The Washington staff does not perform cancer or non-cancer risk assessments, does not use enforcement actions or permit renewals to limit air toxics emissions, and has not yet planned accident prevention or emergency response programs.

In August of 1989, the Air Quality Division in the Washington Department of Ecology had one full time staff member working exclusively on air toxics. This staffer could not estimate the portion of his or her time spent on TRI related work. The budget for the Washington air toxics control program was \$70,000 in 1989.

ii. 1987 TRI Data for Washington

The TRI data for Washington show it to be the average state in terms of chemical emissions. It has approximately: 1) the average number of TRI facilities; 2) the average number of reported releases or transfers; 3) the volume of emissions; and 4) the average volume of releases and transfers.

Washington ranks 25th nationally in air releases. The 243 Washington facilities with TRI emissions filed 727 forms describing 40.6 million pounds of emissions. These emissions constitute 1.53% of all TRI air emissions. Point sources release 59% of the Washington emissions, and fugitive releases constitute the other 41%.

Of Washington's total volume of releases and transfers, 10.0% is TRI emissions. Washington received TRI 1091 reporting forms from 306 different facilities. Washington facilities released or transferred 407.1 million pounds of TRI chemicals, 1.81% of all releases and transfers. These releases and transfers rank Washington 17th nationally in total TRI output.

iii. Summary of 1989 Survey Results for Washington

Washington is using the TRI data as they analyze the potential impacts of their upcoming air toxics regulatory program. The Washington air pollution control agency is currently making decisions about the scope of their upcoming air toxics control program. They are using the TRI data to assess how the impact of the regulation will change if different source classes and sizes are included. They are also using it to judge how applicable these different source classes and sizes would be in a regulation.

These uses of the TRI data have increased the workload of the office by less than five hours a week, and they do not expect

a TRI related budget increase.

The air pollution control agency in Washington did not observe a public response to the TRI data and they received less than 12 questions concerning the TRI data. The Washington air pollution control agency received fewer than 3 questions related to TRI from the media, citizens, citizens' groups or companies. They indicate that the Right to Know Program Office in their Department of Ecology may have received more questions about the TRI data, but none of these questions were forwarded to the air office.

The Washington air pollution control agency does not know of any companies that have voluntarily reduced emissions as a result of the TRI data.

SECTION V: CONCLUSIONS and RECOMMENDATIONS

The Influence of TRI on State Air Toxics Control Programs

The information gathered in this study indicates that the TRI reporting requirements and the TRI data have drawn attention to the States' air toxics control programs and increased State action on toxics emissions controls. However, the changes are not as dramatic as had been anticipated.

The influenced of the TRI data on the State air toxics control programs can be characterized in two ways: 1) they have had to dedicate time to answering questions about the data; and 2) they have found ways to use the data to increase the efficiency or effectiveness of their own programs using the data. To help the States get the most from the TRI data, the EPA must provide tools that decrease the time States must spend on questions, without decreasing the quality of their answers, and the EPA must provide guidance to help the States use the TRI data in their programs efficiently. Specific recommendations about how the EPA can provide these two forms of assistance will be discussed in upcoming parts of this section.

The Importance of Publicity and Questions About the TRI Data

Publicity about the TRI data results in questions for the State air pollution control agencies. These questions can be a drain on the agencies limited staff time and keep the agency from action on actual pollution controls. However, the publicity has a beneficial influence if it causes companies to initiate voluntary emissions reductions. The results of this study imply that companies are motivated to reduce emissions by the threat of a strong public response to publicity about their pollution.

Seven of the nine surveyed States indicated that they had observed some voluntary emissions reductions in response to the release of the TRI data. Voluntary emissions reductions even occurred in New York, where the public response to the TRI data was characterized as "minimal", and Virginia, where the air toxics control staff have not observed any response to the data other than the questions put to their agency. The State air toxics control staff often characterized the voluntary emissions reductions as public relations maneuvers designed to head off a negative response to the TRI data before it actually occurred.

Using Publicity to Encourage Voluntary Emissions Reductions

To encourage additional voluntary emissions reductions, the EPA should help the States: 1) maintain the threat of public response by publicizing the TRI data and their own inventory

data; 2) publicize information linking TRI emissions to the appropriate consumer goods; and 3) enhance the public image of the companies that reduce emissions by publicizing each emissions reduction. Using these policies, the States can develop a sense of environmental consumerism in their citizens. For example, if citizens are informed about the products made by a company that has instituted a voluntary emissions reduction, and they are made aware of the voluntary reduction, they may switch to that company's products out of a sense of gratitude for the company's efforts at environmental protection. This example can also be reversed for companies that get bad press about their emissions levels. In the 1980's, citizens have increasingly used product boycotts as a way of expressing displeasure with corporate actions.

In addition to their concerns about how publicity and the resulting questions will drain their time, the States may be hesitant to actively publicize the emissions data because they have concerns about its accuracy. Eight of the surveyed States indicated that their concerns about the accuracy of the TRI influenced how they use it. Eight States also ranked answering questions as one of their highest priority TRI related activities.

To encourage the States to publicize their emissions data, the EPA must provide tools that make it quick and easy to: 1) get media attention; 2) answer the pursuant questions, and; 3) give their questioners a sense of the ambiguities in the data. The EPA could help the States publicize the TRI data and emissions reductions by giving them 1) training in risk communication; 2) a format for press releases; and 3) sample answers for some of the most frequently asked questions. When asked what additional information would make it easier to use the TRI data, eight States responded with data elements that would help them explain exposure or risk. Each of the three tools mentioned above will help the States improve their ability to explain exposure and risk.

The EPA has already developed a risk communication workshop. This workshop could be modified to focus on TRI related issues and examples and made available to officials in the State air toxics control programs.

The format for press releases and the sample questions should be based on the risk communication materials. The format for press releases and the sample question answers should have a "fill in the blank" design, leading the State officials through all the points that can be used to put emissions data in perspective. If these tools are successful, State officials will be able to have publicity about emissions that does not impede their ability to pursue emissions reductions.

Some of EPA's existing tools designed to help the States understand and explain the TRI data could be made more useful. Though it is not certain whether or not these States have actually used the hotline, five States indicated that they have not found the TRI hotline helpful. This implies that the hotlines' services should be explained to the States more explicitly so they know how to make good use of it.

Three States indicated that they have not found the EPA's Chemical Fact Sheets helpful, and, as previously discussed, the States have requested more information that can be used to assess exposure and risk.

EPA might consider reissuing the Fact Sheets with additional information about the chemicals dispersion characteristics and health effects. Depending on the quality of the available information, the EPA may want to provide an estimate of the chemicals comparative risk in a standard situation. Finally, the EPA should use the fact sheets to provide information on how a chemical is used commercially, so the States can use it in their campaign to develop environmental consumerism.

Helping States Use TRI to Develop Their Own Programs

The nine surveyed States have developed a variety of uses for the TRI data. Though prioritizing where and what to monitor is cited by several States with different air toxics control programs, most of the States have developed uses that are specifically applicable to their program at its current level of sophistication.

To help various States use the TRI data as they develop their toxics control programs, the EPA may want to prepare model TRI use plans. These plans should be distributed to States with similar air toxics control programs. For example, Washington is using the TRI data to assess the impact of regulating different emission source classes and sizes. Other States that are just developing their air toxics control program might be helped by a description of the process used in Washington. However, States with a system for regulating emissions might not need Washington's information. States with an on-going emissions control system might benefit from a description of the process Rhode Island uses to identify out of compliance sources by their TRI emissions estimates.

The EPA may have to make access to these models quite easy to ensure that States do more than ignore the TRI data. However, if the models are made available, they should have a wide audience. Though the raw data has been available to the States since its original submission in July, 1988, and a computerized version was provided to the States in early 1989, few States

appear to have found uses for the data. This lack of use is probably due to concerns about the data's accuracy and the fact that the States' air toxics control staffs tend to be small and busy. The States selected for this study were some of the most advanced in the country in terms of using the TRI data, and even their use of the data was limited and in the initial stages.

The EPA could publicize these models in the NATICH newsletter and make these models available through the NATICH database. This would have the advantage of notifying local air toxics authorities as well as State officials. Authorities in large cities may have as much use for the models as officials in many small States.

EPA FORM R AND INSTRUCTIONS

Toxics Release Inventory
Reporting Form

January 1988

U.S. Environmental Protection Agency
Washington, D.C. 20460

* Please note that this is the final EPA Form R and the instructions as they appeared in the Federal Register on February 16, 1988. A more complete, explicit set of instructions is available from:

The Emergency Planning and Community Right to
Know Information Hotline
WH-562A
U.S. Environmental Protection Agency
Washington, D.C. 20460



or print: read instructions before completing form.)
U.S. Environmental Protection Agency

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

313, Title III of The Superfund Amendments and Reauthorization Act of 1986

EPA FORM
R

(This space for EPA use only.)

PART I. FACILITY IDENTIFICATION INFORMATION

Does this report contain trade secret information?
☐ Yes (Answer 1.2) ☐ No (Do not answer 1.2)

1.2 Is this a sanitized copy?
☐ Yes ☐ No

1.3 Reporting Year

CERTIFICATION (Read and sign after completing all sections.)
I certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers.

Signature of owner/operator or senior management official

Date signed

FACILITY IDENTIFICATION

Facility or Establishment Name

Street Address

County

City

Zip Code

State

Technical Contact

Public Contact

3.2 This report contains information for: (check one)
a. ☐ An entire covered facility.
b. ☐ Part of a covered facility.

Telephone Number (include area code)
() -

Telephone Number (include area code)
() -

Where to send completed forms:

U.S. Environmental Protection Agency
P.O. Box 70298
Washington, DC 20024-0298
Attn: Toxic Chemical Release Inventory

3.5 a. SIC Code b. c.
3.6 Latitude Longitude
Deg. Min. Sec. Deg. Min. Sec.

3.7 Dun & Bradstreet Number(s)
a. b.

3.8 EPA Identification Number (RCRA I.D. No.)
a. b.

3.9 NPDES Permit Number(s)
a. b.

3.10 Name of Receiving Stream(s) or Water Body(s)
a. b.

3.11 Underground Injection Well Code (UIC) Identification No.
a. b. c.

PARENT COMPANY INFORMATION

4.1 Name of Parent Company
Parent Company's Dun & Bradstreet No.

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(Important: Type or print; read instructions before completing form.)

Page 2 of 3

EPA FORM R
PART II. OFF-SITE LOCATIONS TO WHICH TOXIC
CHEMICALS ARE TRANSFERRED IN WASTES

(This space for EPA use only.)

1. PUBLICLY OWNED TREATMENT WORKS (POTW)

Facility Name	
Street Address	
City	County
State	Zip

2. OTHER OFF-SITE LOCATIONS - Number these locations sequentially on this and any additional page of this form you use.

☐ Other off-site location

EPA Identification Number (RCRA ID. No.)

Facility Name	
Street Address	
City	County
State	Zip

Is location under control of reporting facility or parent company?

☐ Yes ☐ No

☐ Other off-site location

EPA Identification Number (RCRA ID. No.)

Facility Name	
Street Address	
City	County
State	Zip

Is location under control of reporting facility or parent company?

☐ Yes ☐ No

☐ Other off-site location

EPA Identification Number (RCRA ID. No.)

Facility Name	
Street Address	
City	County
State	Zip

Is location under control of reporting facility or parent company?

☐ Yes ☐ No

☐ Check if additional pages of Part II are attached.

(Important: Type or print; read instructions before completing form.)

Page 3 of 5

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EPA FORM R

PART III. CHEMICAL SPECIFIC INFORMATION

1. CHEMICAL IDENTITY	
1.1	☐ Trade Secret (Provide a generic name in 1.4 below. Attach substantiation form to this submission.)
1.2	CAS # - - (Use leading zeros if CAS number does not fill space provided.)
1.3	Chemical or Chemical Category Name
1.4	Generic Chemical Name (Complete only if 1.1 is checked.)

MIXTURE COMPONENT IDENTITY (Do not complete this section if you have completed Section 1.)	
2.	Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation)).

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)				
3.1	Manufacture:	a. ☐ Produce	b. ☐ Import	c. ☐ For on-site use/processing
		d. ☐ For sale/distribution	e. ☐ As a byproduct	f. ☐ As an impurity
3.2	Process:	a. ☐ As a reactant	b. ☐ As a formulation component	c. ☐ As an article component
		d. ☐ Repackaging only		
3	Otherwise Used:	a. ☐ As a chemical processing aid	b. ☐ As a manufacturing aid	c. ☐ Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON SITE AT ANY TIME DURING THE CALENDAR YEAR	
	(enter code)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT							
You may report releases of less than 1,000 lbs. by checking ranges under A.1.		A. Total Release (lbs/yr)			B. Basis of Estimate (enter code)		
		A.1 Reporting Ranges		A.2 Enter Estimate			
		0	1-499	500-999			
5.1 Fugitive or non-point air emissions	5.1a				5.1b ☐		
5.2 Stack or point air emissions	5.2a				5.2b ☐		
5.3 Discharges to water (Enter letter code from Part I Section 3.10 for streams(s).)	5.3.1 ☐	5.3.1a			5.3.1b ☐	C. % From Stormwater 5.3.1c	
	5.3.2 ☐	5.3.2a			5.3.2b ☐		5.3.2c
	5.3.3 ☐	5.3.3a			5.3.3b ☐		5.3.3c
5.4 Underground Injection	5.4a				5.4b ☐		
5.5 Releases to land	5.5.1 (enter code)	5.5.1a			5.5.1b ☐		
	5.5.2 (enter code)	5.5.2a			5.5.2b ☐		
	5.5.3 (enter code)	5.5.3a			5.5.3b ☐		

☐ (Check if additional information is provided on Part IV-Supplemental Information.)

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS						
A. Total Transfers (lb/yr)				B. Basis of Estimate (enter code)	C. Type of Treatment/Disposal (enter code)	
A.1 Reporting Ranges			A.2 Enter Estimate			
You may report transfers of less than 1,000 lbs. by checking ranges under A.1.						
0 1-499 500-999						
6.1	Discharge to POTW				6.1b ☐	
6.2	Other off-site location (Enter block number from Part I, Section 2.) ☐				6.2b ☐	6.2c
6.3	Other off-site location (Enter block number from Part I, Section 2.) ☐				6.3b ☐	6.3c
6.4	Other off-site location (Enter block number from Part I, Section 2.) ☐				6.4b ☐	6.4c
☐ (Check if additional information is provided on Part IV-Supplemental information)						

7. WASTE TREATMENT METHODS AND EFFICIENCY								
A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data?			
					Yes	No		
7.1a ☐	7.1b	7.1c ☐	7.1d ☐	7.1e %	7.1f ☐	☐	☐	
7.2a ☐	7.2b	7.2c ☐	7.2d ☐	7.2e %	7.2f ☐	☐	☐	
7.3a ☐	7.3b	7.3c ☐	7.3d ☐	7.3e %	7.3f ☐	☐	☐	
7.4a ☐	7.4b	7.4c ☐	7.4d ☐	7.4e %	7.4f ☐	☐	☐	
7.5a ☐	7.5b	7.5c ☐	7.5d ☐	7.5e %	7.5f ☐	☐	☐	
7.6a ☐	7.6b	7.6c ☐	7.6d ☐	7.6e %	7.6f ☐	☐	☐	
7.7a ☐	7.7b	7.7c ☐	7.7d ☐	7.7e %	7.7f ☐	☐	☐	
7.8a ☐	7.8b	7.8c ☐	7.8d ☐	7.8e %	7.8f ☐	☐	☐	
7.9a ☐	7.9b	7.9c ☐	7.9d ☐	7.9e %	7.9f ☐	☐	☐	
7.10a ☐	7.10b	7.10c ☐	7.10d ☐	7.10e %	7.10f ☐	☐	☐	
7.11a ☐	7.11b	7.11c ☐	7.11d ☐	7.11e %	7.11f ☐	☐	☐	
7.12a ☐	7.12b	7.12c ☐	7.12d ☐	7.12e %	7.12f ☐	☐	☐	
7.13a ☐	7.13b	7.13c ☐	7.13d ☐	7.13e %	7.13f ☐	☐	☐	
7.14a ☐	7.14b	7.14c ☐	7.14d ☐	7.14e %	7.14f ☐	☐	☐	
☐ (Check if additional information is provided on Part IV-Supplemental information.)								

8. OPTIONAL INFORMATION ON WASTE MINIMIZATION				
(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for coded items and an explanation of what information to include.)				
A. Type of modification (enter code)	B. Quantity of the chemical in the wastestream prior to treatment/disposal		C. Index	D. Reason for action (enter code)
	Current reporting year (lb/yr)	Prior year (lb/yr)	Or percent change	
			%	

(Important: Type or print; read instructions before completing form.)

Page 5 of 5

(This space for EPA use only.)

EPA FORM R
PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Parts I and III.
Number or letter this information sequentially from prior sections (e.g., D.8, F, or 5.54, 5.55).

ADDITIONAL INFORMATION ON FACILITY IDENTIFICATION (Part I - Section 3)

3.5	SIC Code	
3.7	Out & Branches Number(s)	
3.8	EPA Identification Number(s) RCRA (D. No.)	
3.9	NPDES Permit Number(s)	
3.10	Name of Receiving Stream(s) or Water Body(s)	

ADDITIONAL INFORMATION ON RELEASES TO LAND (Part III - Section 6.5)

Releases to Land	A. Total Release (lbs/yr)		B. Basis of Estimate (enter code)
	A.1 Reporting Ranges 0 1-499 500-999	A.2 Enter Estimate	
5.5 (enter code)	5.5 a		5.5 b ☐
5.5 (enter code)	5.5 a		5.5 b ☐
5 (enter code)	5.5 a		5.5 b ☐

ADDITIONAL INFORMATION ON OFF-SITE TRANSFER (Part III - Section 6)

	A. Total Transfers (lbs/yr)		B. Basis of Estimate (enter code)	C. Type of Treatment/Disposal (enter code)
	A.1 Reporting Ranges 0 1-499 500-999	A.2 Enter Estimate		
6 Discharge to POTW	6 a		6 b ☐	
6 Other off-site location (Enter block number from Part 5, Section 2.) ☐	6 a		6 b ☐	6 c ☐
6 Other off-site location (Enter block number from Part 5, Section 2.) ☐	6 a		6 b ☐	6 c ☐

ADDITIONAL INFORMATION ON WASTE TREATMENT (Part III - Section 7)

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes No
7 a ☐	7 b ☐	7 c ☐	7 d ☐	7 e %	7 f ☐
7 a ☐	7 b ☐	7 c ☐	7 d ☐	7 e %	7 f ☐
7 a ☐	7 b ☐	7 c ☐	7 d ☐	7 e %	7 f ☐
7 a ☐	7 b ☐	7 c ☐	7 d ☐	7 e %	7 f ☐
7 a ☐	7 b ☐	7 c ☐	7 d ☐	7 e %	7 f ☐

b. Instructions.

INSTRUCTIONS FOR COMPLETING EPA FORM R, THE TOXIC CHEMICAL RELEASE REPORTING FORM

GENERAL INFORMATION

A complete report Form R must be submitted for each toxic chemical manufactured, processed, or otherwise used at each covered facility as prescribed in the reporting rule in 40 CFR Part 372. These instructions supplement and elaborate on the requirements in the reporting rule. Together with the reporting rule, they constitute the reporting requirements; you should read both before attempting to complete Form R. All references in these instructions are to sections in the reporting rule unless otherwise indicated.

The Toxic Chemical Release Reporting Form, EPA Form R, consists of four parts:

- Part I, Facility Identification Information;
- Part II, Off-Site Locations to Which Toxic Chemicals are Transferred in Wastes;
- Part III, Chemical Specific Information; and
- Part IV, Supplemental Information.

Form R is designed so that a majority of the information required in Part I and all of the information required in Part II should be the same for each chemical reported by your facility. If the information in Parts I and II are identical for two or more chemicals, you may submit photostatic copies of those parts for those chemicals as long as each Part I has an original signature on the certification statement. Part III must be completed separately for each chemical. Part IV provides additional space, if needed, to complete the information required by the preceding sections of the form.

A complete report for any listed toxic chemical that is not claimed trade secret consists of the following completed parts:

- Part I with an original signature on the certification statement (Section 2);
- Part II;
- Part III (Section 3 is optional); and
- If applicable, Part IV.

A complete report for a toxic chemical claimed trade secret includes all of the above items plus the following:

- A completed trade secret substantiation form;
- A "sanitized" version of the report in which the chemical identity items (Part III, Sections 1.2 and 1.3) have been left blank but in which a generic chemical name has been supplied (Part III, Section 1.4); and
- A "sanitized" version of the trade secret substantiation form.

WHEN THE REPORT MUST BE SUBMITTED

The report for any calendar year must be submitted on or before July 1 of the following year (e.g., the report for calendar year 1987, January through December, must be submitted on or before July 1, 1988).

WHERE TO SEND THE REPORT

Submit reports, including reports containing trade secret claims (i.e., sanitized) to:

U.S. Environmental Protection Agency
P.O. Box 70266
Washington, D.C. 20024-0266
Attn: Toxic Chemical Release Inventory

In addition, you must send a copy of the report to the State (State of the U.S., the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the U.S. has jurisdiction) in which the facility is located. States will provide addresses where the copies of the reports are to be sent. Copies of the report sent to the State should be the "sanitized," non-trade-secret version of the report, unless the State specifically requests otherwise. For additional information, refer to the discussion of trade secret/confidentiality claims in the instructions for completing Part III, Section 1, of the form.

HOW TO OBTAIN FORMS AND OTHER INFORMATION

Additional copies of EPA Form R and related guidance documents may be obtained from:

Emergency Planning and Community Right-to-Know Hotline
U.S. Environmental Protection Agency
WH-562A
401 M Street, S.W.
Washington, D.C. 20460
(800) 535-0202
(202) 479-2449 (Washington D.C. and Alaska)

INSTRUCTIONS FOR COMPLETING SPECIFIC SECTIONS OF EPA FORM R

The following are specific instructions for completing each section of EPA Form R. The number designations of the parts and sections of these instructions correspond to those in Form R unless otherwise indicated.

PART I. FACILITY IDENTIFICATION INFORMATION

1.1 Does This Report Contain Trade Secret Information?

You must answer this question only after you have completed the rest of the report. The specific identity of the toxic chemical being reported in Part III, Sections 1.2 and 1.3 may be designated as trade secret. If you are making a trade secret claim, answer by marking the "yes" box and proceed to Section 1.3. (See Part III, Section 1, of these instructions for specific instructions on trade secrecy claims.) If the answer is no, proceed to Section 1.3.

1.2 Is This a Sanitized Copy?

You must answer this question only after you have completed the rest of the report. Answer yes if this copy of the report is the public "sanitized" version of a report where the chemical identity is claimed trade secret in Part III, Section 1.4 of the report. Otherwise, answer no.

of the Clean Water Act. If your facility has more than two permits, use the Supplemental Information sheet (Part IV). Use leading places holding zeros. If your facility does not have a permit, enter not applicable [N/A] in box a.

3.10 Name of Receiving Stream or Water Body

You must enter the name of each surface water body or receiving stream to which chemicals being reported are directly discharged. Report the name of each receiving stream or water body as it appears on the NPDES permit for the facility. Enter not applicable [N/A] to any unneeded spaces. If your facility discharges the toxic chemical to more than three receiving streams or water bodies, use the Supplemental Information sheet (Part IV).

3.11 Underground Injection Well Code (UIC) Identification Number

If your facility has a permit to inject chemical-containing waste which includes any toxic chemical being reported into Class 1 deep wells, you must enter the Underground Injection Control (UIC) 13-digit identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit, enter not applicable [N/A] in this space.

4. Parent Company Information

You must provide information on your parent company. For purposes of this form, parent company is defined as a company which directly owns at least 50 percent of the voting stock of another company.

4.1 Name of Parent Company

You must enter the name of the corporation or other business entity that is your parent company. If you have no parent company, enter not applicable [N/A].

4.2 Parent Company's Dun & Bradstreet Number

If applicable, you must enter the Dun and Bradstreet Number for your parent company. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a Dun and Bradstreet number, enter not applicable [N/A]. Use leading place holding zeros.

PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

This section requires a listing of all off-site locations to which you transfer wastes containing the toxic chemical. The information that you enter in this section relates to data to be reported in Part III, Section 6, of the form. List only publicly owned treatment works (POTW) and treatment or disposal facilities. Do not list locations to which products containing the toxic chemical are shipped for sale or distribution in commerce or for further use. Also, do not list locations to which wastes containing the chemical are sold or sent for recovery, recycling, or reuse of the toxic chemical.

1. Publicly Owned Treatment Works (POTW)

You must enter the name and address of the POTW to which your facility discharges wastewater containing any toxic chemical you are reporting. If you do not discharge

wastewater containing reported toxic chemicals to a POTW, enter not applicable [N/A]. If you discharge wastewater containing toxic chemicals to more than one POTW, use additional copies of Part II.

2. Other Off-Site Locations

In the block next to the heading "Other off-site location," enter a number. For the first such off-site location enter "1" in the block. Continue numbering the off-site locations in ascending order. This is the block number required by Part III, Section 6. If your facility transfers the toxic chemical to more than three off-site locations, use additional copies of Part II and continue numbering these locations in ascending order.

In the spaces provided, you must enter the name and address of each location (other than POTWs) to which you ship or transfer wastes containing the toxic chemical. Also enter the RCRA I.D. Number (EPA I.D. Number) for each such location, if known to you. Such information may be found on the Uniform Hazardous Waste Manifest which is required by RCRA regulations.

You must also indicate in the space provided whether the location is owned or controlled by your facility or your parent company.

PART III. CHEMICAL SPECIFIC INFORMATION

1.1 Trade Secret Block

If you are claiming chemical identity as a trade secret, you must mark the trade secret claim box in Section 1.1. In addition, you must attach a completed trade secret substantiation form to the report, as set forth in the trade secret rule in 40 CFR Part 350. When the chemical identity is claimed trade secret, you must also provide a generic name in Section 1.4.

Note: If you complete and submit your Toxic Chemical Release Inventory Reporting Form before the trade secret rule is in effect, you are still required to substantiate your claim that the specific chemical identity is a trade secret. Accordingly, you should follow the provisions of the proposed trade secret rule and use the proposed trade secret substantiation form which appeared in the FEDERAL REGISTER of October 15, 1987 (52FR 38313-38377).

1.2 CAS Registry Number

You must enter the Chemical Abstracts Service (CAS) registry number that appears in section 372.65 of the reporting rule for the chemical being reported. Use leading place holding zeros. If you are reporting one of the chemical categories in section 372.65 of the rule (e.g., copper compounds), enter [N/A] in the CAS number space. CAS numbers are cross-referenced with an alphabetical list of trade names and chemical names in section 372.65 of the rule.

1.3 Chemical or Chemical Category Name

You must enter in the space provided the name of the chemical or chemical category as it is listed in section 372.65 of the reporting rule. Only use names listed in section 372.65.

1.4 Generic Chemical Name

You must complete Section 1.4 if you are claiming the specific chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in

Range Code	Weight Range in Pounds	
	From...	To...
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

If the toxic chemical was present at your facility as part of a mixture or trade name product, to determine the maximum quantity of the chemical present at the facility you must calculate only the weight of the toxic chemical, not the weight of the entire mixture or trade name product. See section 372.90(b) of the reporting rule for further information on how to calculate the weight of the chemical in the mixture or trade name product.

5. Releases of the Chemical to the Environment

In Section 5 you must account for the total aggregate releases of the toxic chemical from your facility to the environment for the calendar year. Releases to the environment include emissions to the air, discharges to surface waters, and releases to land and underground injection wells.

All air releases of the chemical from the facility must be covered. In case of doubt about whether an air release is a point or non-point release, it is important that the release be included as one or the other rather than omitted. Do not enter information on individual emission points or releases. Enter only the total release.

5.1 Fugitive or non-point air emissions.

These are releases to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions.

5.2 Stack or point air emissions.

These are releases to the air that are through stacks, vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from control equipment would generally fall in this category.

5.3 Discharges to water

You must enter the applicable letter code for the receiving stream or water body from Section 3.10 of Part I of the form. Also, you must enter the total annual amount of the chemical released from all discharge points at the facility to each receiving stream or water body. You must include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff if applicable (see instructions for column C below). Do not include "indirect" discharges to surface waters such as to a POTW or off-site wastewater treatment facility. These must be reported in Section 6.

5.4 Underground injection

You must enter the total annual amount of the chemical that was injected into wells, including Class I and other types, at the facility.

5.5 Releases to land

You must report quantities of the chemical that were landfilled, impounded, or otherwise disposed of at the facility. Do not report land disposal at off-site locations in this section. You must enter the appropriate disposal code from the following list:

Disposal Codes

- D01 Landfill
- D03 Land Treatment/Application/Farming
- D05 Surface Impoundment (to be closed as a Landfill)
- D99 Other Disposal

Three lines are provided in this section of the form to accommodate various types of land disposal.

For the purposes of this form, a surface impoundment is considered "final disposal." Quantities of the chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally must not be reported in this section of the form. However, if the impoundment accumulates sludges containing the chemical, you must include an estimate in this section unless the sludges are removed and otherwise disposed of (in which case they should be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of the form.

A. Total Release

Only releases of the toxic chemical to the environment for the calendar year are to be reported in this section of the form. The total releases from your facility do not include transfers or shipments of the chemical from your facility for sale or distribution in commerce or of wastes to other facilities for treatment or disposal (see Section 6.1). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released.

A.1 Reporting Ranges

For reports submitted for calendar years 1987, 1988, and 1989 only, you may take advantage of range reporting for releases that are less than 1,000 pounds for the year to an environmental medium. You may mark one of the three boxes, 0, 1-499, or 500-999, corresponding to releases of the chemical to any environmental medium (i.e., any line item); however, you do not have to use these range check boxes. You have the option of providing a specific figure in column A.2 as described below.

For releases of 1,000 pounds or more for the year to any medium, you must provide an estimate in pounds per year in column A.2. Any estimate provided in column A.2 is required to be accurate to no more than two significant figures. Beginning with reports for calendar year 1990, you may not use ranges to report; you must report in column A.2.

be calculated using the following formula:

$$(1 \times \text{fractional paved or roofed area}) + (0.3 \times \text{fractional grass area}) + (0.5 \times \text{fractional graveled area}) = \text{site runoff coefficient}$$

If you have monitored stormwater but did not detect the chemical, enter zero (0) in this space. If your facility has no stormwater monitoring data for the chemical, enter no data [N/D] in this space on the form.

6. Transfers of the Chemical in Waste to Off-Site Locations

You must report in this section the total annual quantity of the chemical sent to any of the off-site disposal, treatment, or storage facilities for which you have provided an address in Part II.

Line 6.1 is for transfers to a POTW. Lines 6.3 through 6.4 are provided for transfers to other off-site locations, including privately owned wastewater treatment facilities.

Enter, from Section 2 of Part II, the block number that corresponds to the off-site location to which you transferred waste containing the chemical. If you need additional space (i.e., you ship waste to more than three off-site locations), check the box at the bottom of Section 6 and use the Supplemental Information sheet (Part IV).

A. Total Transferred

You must follow the instructions for providing estimates as presented in the instructions for column A of Section 5 above. You must enter the amount in pounds of only the toxic chemical that is being transferred; do not enter the total poundage of wastes, including mixtures or trade name products containing the chemical. As with Section 5, you may report in ranges only for calendar years 1987, 1988, and 1989.

B. Basis of Estimate

You must identify the basis for your estimate. Follow the instructions and use the same codes as presented in the instructions for column B of Section 5.

C. Type of Treatment/Disposal

You must enter one of the following codes to identify the type of treatment or disposal method used by the off-site location for the chemical being reported. You may have this information in your copy of EPA Form 30, Item 3 of the Annual/Biennial Hazardous Waste Treatment, Storage, and Disposal Report (RCRA). Applicable codes for this section are as follows:

- M10 Storage Only
- M20 Reuse as Fuel/Fuel Blending
- M40 Solidification/Stabilization
- M50 Incineration/Thermal Treatment
- M61 Wastewater Treatment (Excluding POTW)
- M69 Other Treatment
- M71 Underground Injection
- M72 Landfill/Disposal Surface Impoundment
- M73 Land Treatment
- M79 Other Land Disposal
- M90 Other Off-Site Management
- M91 Transfer to Waste Broker
- M99 Unknown

7. Waste Treatment Methods and Efficiency

In Section 7, you must provide the following information

related to the chemical whose releases are being reported: (A) the general wastestream types containing the chemical being reported; (B) the waste treatment methods (if any) used on all wastestreams containing the chemical; (C) the range of concentrations of the chemical in the influent to the treatment method (D) whether sequential treatment is used; (E) the efficiency or effectiveness of each treatment method in removing the chemical; and (F) whether the treatment efficiency figure was based on actual operating data. You must use a separate line in Section 7 for each treatment method used on a wastestream. This section is to be used to report only treatment of wastestreams at your facility, not treatment off-site.

A. General Wastestream

For each waste treatment method report you must indicate the type of wastestream containing the chemical that is treated. Enter the letter code that corresponds to the general wastestream type:

- A = Gaseous (including gases, vapors, airborne particulates)
- W = Wastewater (aqueous waste)
- L = Liquid waste (non-aqueous waste)
- S = Solid waste (including sludges and slurries)

If a waste is a mixture of water and organic liquid, you must report it under wastewater unless the organic content exceeds 50 percent. Slurries and sludges containing water must be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

B. Treatment Method

Codes for treatment methods are included in Table I of these instructions. You must enter the code for each treatment method used on a wastestream containing the toxic chemical, regardless of whether this treatment method actually removes the specific chemical. Treatment methods must be reported by type of waste being treated (i.e., gaseous wastes, aqueous wastes, liquid non-aqueous wastes, and solids).

Wastestreams containing the chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to treatment. Report treatment methods that apply to the aggregate wastestream as well as treatment methods that apply to individual wastestreams. If your facility treats various wastewater streams containing the chemical in different ways, the different treatment methods must each be listed separately.

Your facility may have several pieces of equipment performing a similar service. It is not necessary to enter four lines of data to cover four scrubber units, for example, if all four are treating wastes of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differ from one unit to the next, each scrubber must be listed separately.

C. Range of Influent Concentration

The form requires an indication of the range of concentration of the toxic chemical in the wastestream (i.e., the influent) as it typically enters the treatment equipment. You must enter in the space provided one of

B. Quantity of the chemical in the wastestream prior to treatment/disposal

Enter the pounds of the toxic chemical in wastes in the reporting year and the pounds in wastes in the year prior to implementing waste minimization (the "base year"). Alternatively, to protect confidential information, you may wish to enter only the percentage by which the weight of the chemical in the wastes has changed. This figure (percentage) may be calculated using the following formula:

$$\frac{\text{toxic chemical in wastes in reporting year} - \text{toxic chemical in wastes in prior year}}{\text{toxic chemical in wastes in prior year}} \times 100$$

The resulting figure may be either negative or positive.

C. Index

Enter the ratio of reporting-year production to production in the base year. This index should be calculated to most closely reflect activities involving the chemical. Examples of acceptable indices include:

- Chemical produced in 1987/chemical produced in 1986.
- Paint produced in 1987/paint produced in 1986.
- Appliances coated in 1987/appliances coated in 1986.
- Square feet of solar collector fabricated in 1987/square feet of solar collector fabricated in 1986.
- Value of sales in 1987/value of sales in 1986.

For example, a company manufactures 200,000 pounds of a chemical in 1986 and 250,000 pounds of the same chemical in 1987. The index figure to report would be 1.25 (1.25 rounded). The index provides a means for users of the data to distinguish the effects of changes in business activity from the effects specifically of waste minimization efforts. It is not necessary to indicate the units on which the index is based.

D. Reason for action

Finally, enter the codes from the following list that best describe the reason for initiating the waste minimization effort:

- R1 - Regulatory requirement for the waste.
- R2 - Reduction of treatment/disposal costs.
- R3 - Other process cost reduction.
- R4 - Self-initiated program.
- R5 - Other (e.g., discontinuation of product, occupational safety, etc.).

SECTION 313 TOXIC CHEMICAL LIST (Including Chemical Categories)

(Chemicals may be added or deleted to the list. The Emergency Planning and Community Right-to-Know Hotline will provide up-to-date information on the status of these changes.)

a. Alphabetical List

CAS Number	Chemical Name		
75-07-0	Acetaldehyde	1987-37-7	C.I. Direct Black 38
60-36-5	Acetamide	2603-46-3	C.I. Direct Blue 6
67-64-1	Acetone	18071-36-6	C.I. Direct Brown 68
75-06-8	Acetonitrile	2883-40-8	C.I. Disperse Yellow 3
53-96-3	3-Acetylaminofluorene	3761-53-3	C.I. Food Red 5
107-03-8	Acrolein	81-88-9	C.I. Food Red 15
79-06-1	Acrylamide	3118-97-6	C.I. Solvent Orange 7
79-10-7	Acrylic acid	97-54-3	C.I. Solvent Yellow 3
107-13-1	Acrylonitrile	843-07-9	C.I. Solvent Yellow 14
309-00-2	Aldrin [1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha., 4.alpha.,4a.beta.,5.alpha., 8.alpha.,8a.beta.)-]	493-80-8	C.I. Solvent Yellow 34 (Aurimine)
		128-66-5	C.I. Vat Yellow 4
		7440-43-9	Cadmium
		156-63-7	Calcium cyanamide
		123-06-2	Captan [1H-leucindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2- [(trichloromethyl)thio]-]
107-06-1	Allyl chloride	63-25-2	Carbaryl [1-Naphthalenol, methylcarbamate]
7439-90-8	Aluminum (fume or dust)	75-15-0	Carbon disulfide
1344-28-1	Aluminum oxide	56-23-5	Carbon tetrachloride
117-79-3	2-Aminoanthraquinone	463-58-1	Carbonyl sulfide
60-09-3	4-Aminobenzenes	130-80-9	Catechol
93-87-1	4-Aminobiphenyl	133-90-4	Chloramben [Benzoic acid, 3-amino- 2,5-dichloro-]
83-28-0	1-Amino-2-methylantraquinone	57-74-9	Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro- 2,3,3a,4,7,7a-hexahydro-]
7864-41-7	Ammonia	7783-50-8	Chlorine
6484-82-2	Ammonium nitrate (solution)	10049-04-4	Chlorine dioxide
7783-20-2	Ammonium sulfate (solution)	79-11-3	Chloroacetic acid
62-83-3	Aniline	532-27-4	2-Chloroacetophenone
90-04-0	p-Anisidine	108-90-7	Chlorobenzene
104-94-9	m-Anisidine	510-15-6	Chlorobenzoate [Benzenecarboxylic acid, 4-chloro-.alpha.-(4- chlorophenyl)- .alpha.-hydroxy-, ethyl ester]
134-29-2	2-Anisidine hydrochloride	75-00-3	Chloroethane (Ethyl chloride)
120-12-7	Anthracene	67-66-3	Chloroform
7440-36-0	Antimony	74-87-3	Chloromethane (Methyl chloride)
7440-38-2	Arsenic	107-30-2	Chloromethyl methyl ether
1332-21-4	Asbestos (friable)	126-99-8	Chloroprene
7440-39-3	Barium	1897-45-6	Chlorothalonil [1,3- Bis(methylene)dinitrile, 2,4,5,6-tetrachloro-]
98-87-3	Benzal chloride	7440-47-3	Chromium
55-21-0	Benzamide	7440-48-4	Cobalt
71-43-2	Benzene	7440-50-8	Copper
92-87-5	Benzidine	120-71-8	p-Cresidine
98-07-7	Benzoic trichloride (Benzoetrichloride)	1319-77-3	Cresol (mixed isomers)
98-88-4	Benzoyl chloride	108-39-4	m-Cresol
94-36-0	Benzoyl peroxide	96-48-7	p-Cresol
100-44-7	Benzyl chloride	108-44-8	p-Cresol
7440-41-7	Beryllium	98-82-8	Cumene
92-52-4	Biphenyl	80-15-9	Cumene hydroperoxide
111-44-4	Bis(2-chloroethyl) ether	128-20-6	Cupferron [Benzenesulfonamide, N-hydroxy- N-nitroso, ammonium salt]
543-88-1	Bis(chloromethyl) ether	110-82-7	Cyclohexane
108-90-1	Bis(2-chloro-1-methylethyl) ether	94-75-7	2,4-D [Acetic acid, (2,4-dichloro- phenoxy)-]
103-23-1	Bis(2-ethylhexyl) adipate	1163-19-5	Decabromodiphenyl oxide
75-28-2	Bromoform (Tribromomethane)		
74-83-9	Bromomethane (Methyl bromide)		
106-99-0	1,3-Butadiene		
141-32-2	Butyl acrylate		
71-36-3	n-Butyl alcohol		
75-92-2	sec-Butyl alcohol		
75-68-0	tert-Butyl alcohol		
85-68-7	Butyl benzyl phthalate		
108-88-7	1,3-Butylene oxide		
123-72-8	Butyraldehyde		
2680-18-2	C.I. Acid Blue 9, diammonium salt		
3844-48-9	C.I. Acid Blue 9, disodium salt		
4680-78-8	C.I. Acid Green 3		
589-64-2	C.I. Basic Green 4		
909-38-8	C.I. Basic Red 1		

759-73-9	N-Nitroso-N-ethylurea
684-93-5	N-Nitroso-N-methylurea
16843-35-5	N-Nitrosomornicotine
100-75-4	N-Nitrosopiperidine
2334-13-1	Octachloronaphthalene
20816-12-0	Osmium tetroxide
56-32-2	Parathion [Phosphorothioic acid, O, O-diethyl-O-(4-nitrophenyl) ester]
87-86-5	Pentachlorophenol (PCP)
79-31-0	Peracetic acid
108-96-2	Phenol
106-50-3	p-Phenylenediamine
90-43-7	2-Phenylphenol
75-44-5	Phosgene
7084-32-2	Phosphoric acid
7723-14-0	Phosphorus (yellow or white)
85-44-9	Phthalic anhydride
88-99-1	Picric acid
1336-36-3	Polychlorinated biphenyls (PCBs)
1120-71-4	Propene sulfone
57-57-8	beta-Propiolactone
123-38-6	Propionaldehyde
114-26-1	Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]
115-07-1	Propylene (Propene)
75-55-5	Propyleneimine
75-56-9	Propylene oxide
110-86-1	Pyridine
91-22-5	Quinoline
106-51-4	Quinone
83-68-8	Quintocene [Pentachloronitrobenzene]
81-07-2	Saccharin (manufacturing, no supplier notification) [1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide]
94-59-7	Safrole
7782-49-2	Selenium
7440-22-4	Silver
1310-73-2	Sodium hydroxide (solution)
7787-82-6	Sodium sulfate (solution)
100-42-5	Styrene
96-09-3	Styrene oxide
7084-93-9	Sulfuric acid
100-21-0	Terephthalic acid
79-34-5	1,1,2,2-Tetrachloroethane
127-18-4	Tetrachloroethylene (Perchloroethylene)
961-11-5	Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,3,5-trichlorophenyl)ethenyl dimethyl ester]
7440-28-0	Thallium
62-55-5	Thioacetamide
139-48-1	4,4'-Thiodianiline
62-56-6	Thiourea
1314-20-1	Thorium dioxide
13463-67-7	Titanium dioxide
7550-45-0	Titanium tetrachloride
108-88-3	Toluene
584-84-9	Toluene-2,4-diisocyanate
91-08-7	Toluene-2,6-diisocyanate
96-53-4	o-Toluidine
636-21-5	p-Toluidine hydrochloride
8001-36-2	Toxaphene
68-78-8	Triisiquone [2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-]
52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]
120-62-1	1,2,4-Trichlorobenzene
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)
79-00-5	1,1,2-Trichloroethane
79-01-6	Trichloroethylene

95-95-4	2,4,5-Trichlorophenol
88-06-2	2,4,6-Trichlorophenol
1552-09-3	Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]
95-83-6	1,2,4-Trimethylbenzene
126-72-7	Tris(2,3-dibromopropyl) phosphate
51-79-6	Urethane (Ethyl carbamate)
7440-62-2	Vanadium (fume or dust)
106-06-4	Vinyl acetate
598-60-2	Vinyl bromide
75-01-4	Vinyl chloride
75-35-4	Vinylidene chloride
1330-20-7	Xylene (mixed isomers)
106-32-3	m-Xylene
95-47-6	p-Xylene
106-42-3	o-Xylene
87-62-7	2,6-Xyldine
7440-66-6	Zinc (fume or dust)
12122-67-7	Zincob [Carbamodithioic acid, 1,2-ethanedithioic-, zinc complex]

b. List By CAS Number (Effective Date January 1, 1987)

CAS Number	Chemical Name
50-00-0	Formaldehyde
51-28-5	2,4-Dinitrophenol
51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylaniline]
51-79-6	Urethane (Ethyl carbamate)
52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-dimethyl ester]
53-95-3	2-Acetylamino fluorene
55-18-5	N-Nitrosodiethylamine
55-21-0	Benzamide
55-63-0	Nitroglycerin
56-23-5	Carbon tetrachloride
56-35-2	Parathion [Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester]
57-14-7	1,1-Dimethyl hydrazine
57-57-8	beta-Propiolactone
57-74-9	Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]
58-89-9	Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1.alpha., 2.alpha., 3.beta., 4.alpha., 5.alpha., 6.beta.)-]
59-89-2	N-Nitrosomorpholine
60-09-3	4-Aminoazobenzene
60-11-7	4-Dimethylaminoazobenzene
60-34-4	Methyl hydrazine
60-35-5	Acetamide
62-53-3	Aniline
62-55-5	Thioacetamide
62-56-6	Thiourea
62-73-7	Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]
62-75-9	N-Nitrosodimethylamine
63-25-2	Carbaryl [1-Naphthalenol, methylcarbamate]
64-67-5	Diethyl sulfate
67-58-1	Methanol
67-63-0	Isopropyl alcohol (manufacturing-strong acid process, no supplier notification)
67-64-1	Acetone
67-68-3	Chloroform
67-72-1	Hexachloroethane

110-82-7	Cyclohexane	584-84-9	Toluene-2,4-dicyanate
110-86-1	Pyridine	593-60-2	Vinyl bromide
111-43-3	Diethanolamine	608-30-2	2,6-Dinitrotoluene
111-44-4	Bis(2-chloroethyl) ether	615-05-4	2,4-Diaminoanisole
114-24-1	Propenur [Phenol, 2-(1-methylethoxy)-, methycarbamate]	631-44-7	N-Nitrosodi-g-propylamine
115-07-1	Propylene (Propene)	634-83-9	Methyl isocyanate
115-32-3	Dicofol [Benzeneethanol, 4-chloro- alpha.-(4-chlorophenyl)- alpha.-(trichloromethyl)-]	636-21-5	g-Toluidine hydrochloride
117-79-3	2-Aminoanthraquinone	680-31-9	Hexamethylphosphoramide
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	684-93-5	N-Nitroso-N-methylurea
117-84-0	g-Dioctyl phthalate	759-73-9	N-Nitroso-N-ethylurea
118-74-1	Hexachlorobenzene	842-07-9	C.I. Solvent Yellow 14
119-90-4	3,3'-Dimethoxybenzidine	924-16-3	N-Nitrosodi-g-butylamine
119-93-7	3,3'-Dimethylbenzidine (g-Tolidine)	961-11-5	Tetrachlorvinphos [Phosphoric acid, 3-chloro-1-(2,3,5-trichlorophenyl)ethanyl dimethyl ester]
120-12-7	Anthracene	969-38-8	C.I. Basic Red 1
120-71-8	g-Cresidine	1120-71-4	Propane sulfone
120-80-9	Catechol	1163-19-5	Decahydrodiphenyl oxide
120-82-1	1,3,4-Trichlorobenzene	1210-73-3	Sodium hydroxide (solution)
120-83-3	2,4-Dichlorophenol	1218-27-5	Molybdenum trioxide
121-14-2	2,4-Dinitrotoluene	1214-30-1	Thorium dioxide
121-69-7	N,N-Dimethylaniline	1219-77-3	Cresol (mixed isomers)
122-66-7	1,3-Diphenylhydrazine (Hydrazobenzene)	1230-20-7	Xylene (mixed isomers)
123-31-9	Hydroquinone	1232-21-4	Asbestos (friable)
123-32-6	Propionaldehyde	1234-87-1	Hexachloronaphthalene
123-72-8	Butyraldehyde	1236-28-3	Polychlorinated biphenyls (PCBs)
123-91-1	1,4-Dioxane	1244-28-1	Aluminum oxide
124-72-7	Tris(2,3-dibromopropyl) phosphate	1464-63-5	Diisopropylbutane
124-99-8	Chloroprene	1552-09-8	Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]
127-18-4	Tetrachloroethylene (Perchloroethylene)	1634-04-4	Methyl tert-butyl ether
128-66-8	C.I. Vat Yellow 4	1838-75-5	Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]
131-11-3	Dimethyl phthalate	1897-45-6	Chlorothalonil [1,3-Benzenedicarbonylnitrile, 2,4,5,6-tetrachloro-]
132-64-9	Dibenzofuran	1937-37-7	C.I. Direct Black 38
133-06-2	Captan [1H-Indole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2- [(trichloromethyl)thio]-]	2164-17-3	Fluometuron [Urea, N,N-dimethyl-N'-(3-(trifluoromethyl)phenyl)-]
133-90-4	Chloramban [Benzoic acid, 2-amino-3,5-dichloro-]	2234-13-1	Octachloronaphthalene
134-29-2	g-Anisidine hydrochloride	2303-16-4	Diallate [Carbamothioc acid, bis(1-methylethyl)-, 3-(2,3-dichloro-2-propenyl) ester]
134-32-7	alpha-Naphthylamine	2602-46-2	C.I. Direct Blue 6
134-20-6	Cupferron [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	2650-18-2	C.I. Acid Blue 9, diammonium salt
139-13-9	Nitrilotriacetic acid	2832-40-8	C.I. Disperse Yellow 3
139-65-1	4,4'-Thiodianiline	3118-97-6	C.I. Solvent Orange 7
140-88-8	Ethyl acrylate	3761-63-3	C.I. Food Red 5
141-33-2	Butyl acrylate	3844-48-9	C.I. Acid Blue 9, disodium salt
151-56-4	Ethyleneimine (Aziridine)	4549-40-0	N-Nitrosomethylvinylamine
156-10-8	g-Nitrosodiphenylamine	4630-78-8	C.I. Acid Green 3
156-62-7	Calcium cyanamide	6484-52-2	Ammonium nitrate (solution)
302-01-2	Hydrazine	7429-90-5	Aluminum (fume or dust)
309-00-2	Aldrin [1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha., 4.alpha.,4a.beta.,5.alpha., 8.alpha.,8a.beta.)-]	7439-92-1	Lead
334-88-3	Diasomethane	7439-96-5	Manganese
463-18-1	Carbonyl sulfide	7439-97-6	Mercury
492-90-8	C.I. Solvent Yellow 34 (Auramine)	7440-02-0	Nickel
505-90-2	Mustard gas [Ethane,1,1'-thiobis(2-chloro)-]	7440-22-4	Silver
510-15-6	Chlorobenzilate [Benzenecetic acid, 4-chloro-alpha.-(4-chlorophenyl)-alpha-hydroxy-ethyl ester]	7440-28-0	Thallium
532-37-4	2-Chloroacetophenone	7440-36-0	Antimony
534-52-1	4,6-Dinitro-g-cresol	7440-38-2	Arsenic
540-69-0	1,2-Dichloroethylene	7440-39-3	Barium
541-41-3	Ethyl chloroformate	7440-41-7	Beryllium
541-73-1	1,3-Dichlorobenzene	7440-43-9	Cadmium
542-73-6	1,3-Dichloropropylene	7440-47-3	Chromium
542-88-1	Bis(chloromethyl) ether	7440-48-4	Cobalt
569-64-2	C.I. Basic Green 4	7440-50-8	Copper
		7440-62-3	Vanadium (fume or dust)
		7440-66-6	Zinc (fume or dust)
		7550-45-0	Titanium tetrachloride
		7647-01-0	Hydrochloric acid
		7664-38-2	Phosphoric acid
		7664-39-3	Hydrogen fluoride
		7664-41-7	Ammonia

BACKGROUND INFORMATION

NAME: _____

TITLE: _____

OFFICE: _____

AGENCY: _____

PHONE NUMBER: _____

NUMBER OF FULL TIME AIR TOXICS STAFF IN YOUR OFFICE: _____

1989 BUDGET FOR YOUR AIR TOXICS PROGRAM (including intramural and extramural funds):

NUMBER OF STAFF PERSONS ASSIGNED TO SARA SECTION 313 WORK: _____

DATE: _____

I. Influence of SARA 313 on Resources

1. Roughly how many hours a week did your office spend on SARA 313 activities prior to the June 19, 1989 publication of the Toxic Release Inventory (TRI)? <5 6-10 11-20 21-40 41-60 >60

1a. How many hours a week have you spent on SARA 313 activities since the publication of TRI? <5 6-10 11-20 21-40 41-60 >60

2. Please specify which of the following SARA related activities are performed by your office, and rank them by the time they take, with 1 as the most time and 6 as the least time.

Ranking

- a. Answer questions from companies
- b. Answer questions from individual citizens
- c. Answer questions from citizens' groups
- d. Answer questions from the press/media
- e. Support for offices with prime SARA responsibility
- f. Data processing and data bank updates
- g. Using the data in permitting/regulatory reviews
- h. Using the data for compliance or inspection plans
- i. Any other activities? (Please describe below.)

3. How many times has your office answered questions on SARA Section 313 or Section 313 data from each of the following groups?

- | | | | | | | | |
|--------------------|----|-----|------|-------|-------|-------|-----|
| a. Companies | <3 | 4-6 | 7-10 | 11-15 | 16-20 | 21-50 | >50 |
| b. Individuals | <3 | 4-6 | 7-10 | 11-15 | 16-20 | 21-50 | >50 |
| c. Citizens groups | <3 | 4-6 | 7-10 | 11-15 | 16-20 | 21-50 | >50 |
| d. Press/media | <3 | 4-6 | 7-10 | 11-15 | 16-20 | 21-50 | >50 |

4. Will your office staff or budget be increased because of SARA Section 313 related demands or actions? Y N

5. How have the SARA 313 data and your SARA 313 related activities influenced the other activities of your office, such as research, or public outreach?

II. Questions About SARA 313 Data

1. What types of questions have you been asked about the SARA Section 313 air emissions data?

- | | | |
|--|---|---|
| a. about how to access the data | Y | N |
| b. about the accuracy of the data | Y | N |
| c. about how to interpret the data | Y | N |
| d. about the toxicity of a certain chemical | Y | N |
| e. about exposure to the chemical emissions | Y | N |
| f. about the risk from the emissions | Y | N |
| g. other types of questions (Please describe below.) | | |
-
-
-

2. If you are asked SARA related questions that are not about the air emissions data, what are they about?

3. Are you able to answer most of the questions? Y N

3a. What type of question do you have trouble answering?

- | | | |
|--|---|---|
| a. about how to access the data | Y | N |
| b. about the accuracy of the data | Y | N |
| c. about how to interpret the data | Y | N |
| d. about the toxicity of a certain chemical | Y | N |
| e. about exposure to the chemical emissions | Y | N |
| f. about the risk from the emissions | Y | N |
| g. other types of questions (Please describe below.) | | |
-
-

4. What has helped you understand and explain the SARA data?

- | | | | |
|---|---|---|---|
| a. Fact Sheets on SARA chemicals | Y | N | |
| b. The EPA's TRI Hotline | Y | | N |
| c. Other services or data sources (Please specify below.) | | | |
-
-

III. Response to the SARA 313 Data

1. Has the media in your area published reports that analyze or discuss the SARA section 313 data for your area? Y N

1a. What initiated the media interest in the SARA data?

- | | | |
|--|---|---|
| a. An action taken by your office | Y | N |
| b. EPA's release of the data (6/19/89) | Y | N |
| c. Rep. Waxman's release of data (3/21/89) | Y | N |
| d. State Emergency Response Committee (SERC) | Y | N |
| e. Local Emergency Planning Committee (LEPC) | Y | N |
| f. Other causes? (Please describe below.) | | |

2. Has there been a public reaction to the SARA Section 313 air emissions data (other than the questions described in section II of this questionnaire)?

Y N

2a. If yes, what form has the reaction taken?

- | | | |
|---|---|---|
| a. Letters or calls to industry | Y | N |
| b. Letters or calls to your agency | Y | N |
| c. Letters to the media/media editorials | Y | N |
| d. Specific demands for regulation | Y | N |
| e. Other actions (Please describe below.) | | |

3. Do you know of any industry efforts to reduce chemical emissions that have occurred because of the SARA data Y N

3a. Please describe the change.

IV. Use of the SARA 313 Data by Your Air Toxics Program

1. Have you tried to verify the SARA Section 313 emissions data for your area?

Y N

1a. Are the emissions estimates in the SARA data similar to the those of other data sources? Y N

1b. What data sources have you used to verify SARA data?

2. How accurate do you consider the SARA air emission estimates? (Circle one.)

a. Generally accurate to within a factor of 2 (most estimates are between 1/2 and twice the correct value)

b. generally accurate to within an order of magnitude

c. generally accurate to within two orders of magnitude

d. less accurate than two orders of magnitude

3. How has the data's accuracy influenced your use of the data? (Circle as many as apply.)

a. Only use the data in ranges

b. Always include an error factor when using the data

c. reduced interest in using the data

d. other influences (Please describe below.)

4. If your air toxics program is based on permits, do you think there will be any changes in your permits or permit system because of the SARA air emissions data?

Y N

4a. If yes, what type of changes do you expect?

a. In the permitting process

Y N

b. In the permitted emission levels

Y N

c. In the schedule for reissuing permits

Y N

d. Permits for more/different chemicals

Y N

e. Permits for more/different sources

Y N

f. Any other changes? (Please describe below)

5. Do you think your agency will use the SARA air emissions data in any compliance/enforcement activities? Y N

5a. If yes, how will you use the SARA data for compliance/enforcement actions?
